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Understanding the humanistic interaction with medical imaging technology

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Understanding the Humanistic Interaction with Medical Imaging Technology.

Thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy. University of Wales, Bangor

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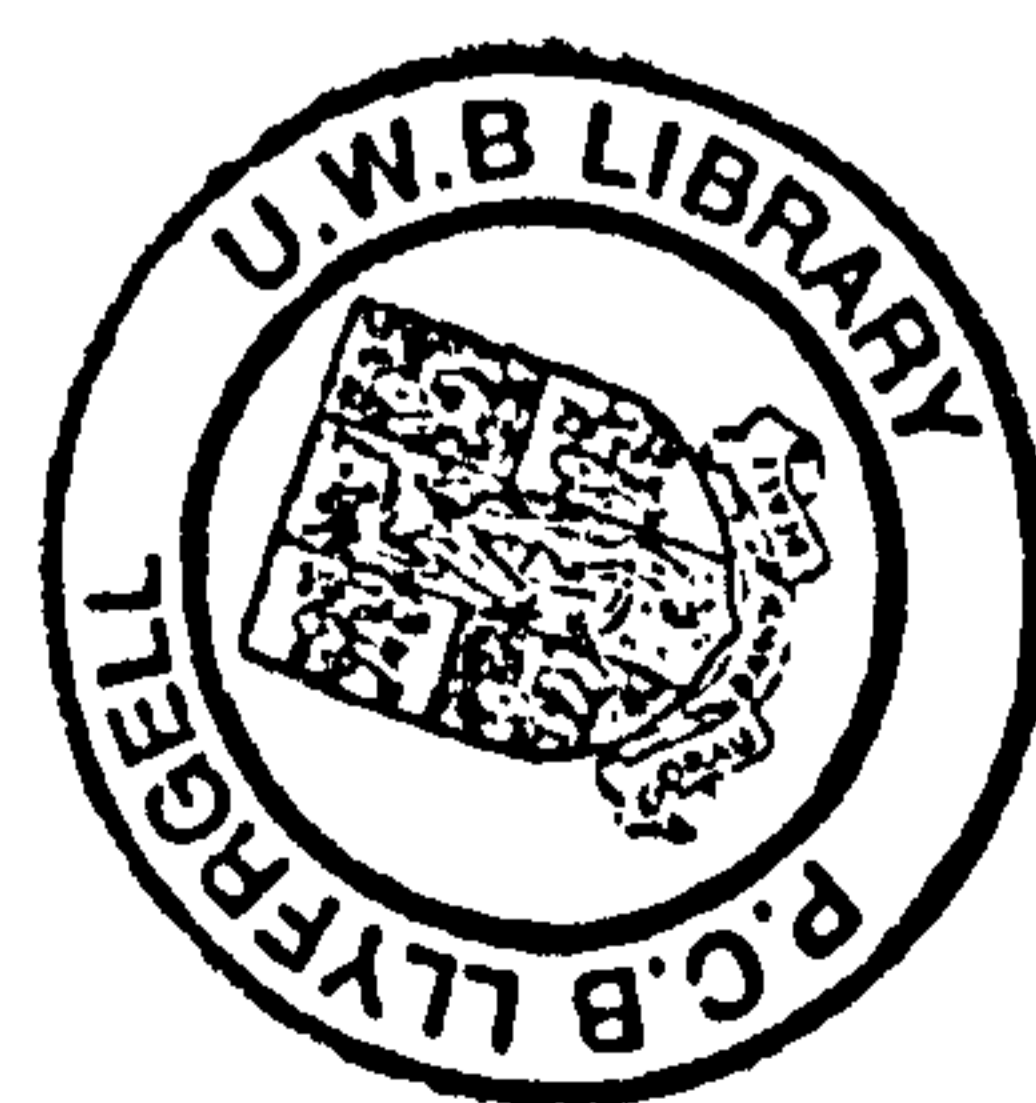
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by

Frederick Murphy

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Summary

This study set out to discover the nature of the interactions that occur between the radiographer, patient and high technology imaging equipment. The investigation focussed upon two radiology departments where patients had just had either a CT or MR scan. No attempt was made to generalise the findings, since it was the existence of the phenomena, rather than the frequency of events elsewhere, that was under scrutiny.

A thorough literature review revealed a distinct lack of previous research in this area, with only quantitative methodological approaches having been employed. This study was a purely inductive qualitative investigation, that sought to explore feelings, meanings and roles within the context of the imaging departments.

A thematic content analysis of 49 semi-structured patient interviews revealed a varying degree of satisfaction, fear and misunderstanding. These data were complemented with 8 interviews of self-selecting radiographers, who had experienced a CT or MR scan, and 8 interviews of radiographers who predominately worked in these high technology areas. Following data analysis, specific typologies were derived from the concepts to formulate a model of the humanistic interaction with medical imaging technology. Discussion of the findings related to the technological and humanistic literature, and the alternative micro-sociological perspectives of Symbolic Interactionism and Critical Dramaturgy, gave a more creative explanation of the unique theory. The final section of the discussion considered the potential for future research

and a reflexive analysis of the study. In conclusion, the model is considered to be a valid conceptual representation of the interactions within the context of the naturalistic setting. The theory developed provides enlightening insights with respect to roles and rituals performed in the radiology department.

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CHAPTER 1

INTRODUCTION

The experiences of patients and radiographers within the context of sophisticated imaging technology such as Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) has rarely been investigated from a social scientific perspective (Barley, 1986; 1990).

Many quantitative studies have produced conflicting statistics with regard to the extent of the problems and difficulties encountered (Gray, 1999), and little or no attempt has been made within the radiography profession to obtain qualitative data from the patients and the radiographers.

It appears that the patient interaction with imaging technology may be often disregarded in favour of complex functionality and performance measurements (Cesar, 1997).

Despite efforts to disseminate high quality patient information, the fact still remains that while some patients are very satisfied with their imaging experience, for others it is considered to be a very traumatic event (Murphy, 1999).

Equally, the radiographer's role in the imaging procedure, which may be repeated on a regular basis during the day, may be seen as a mundane, and in some cases, an automated task. However, it is only by scrutinising the ordinary that meaning and understanding may be revealed (Charon, 2001).

The role of the radiographer, in an area requiring highly skilled technological knowledge, may appear to be in opposition to high quality patient care, this was evident in nursing

studies that have 'charged medical technology with the dehumanisation, depersonalisation, and objectification of patients' (Barnard and Sandelowski, 2001, p.367). The fact that the patient is often left alone and is placed inside the bore of the machine may, it is suggested, present radiography patients with further difficulties.

As Corbin (2003. p.261) recently acknowledged, medical technology can take on another dimension, 'where it becomes an extension of the self.' It is therefore appropriate to study the tripartite configuration of the interaction by studying the patients, the radiographers and the imaging technology.

While research into holistic patient care in radiography has produced some useful models and pathways (Reeves, 1999), the specific impact of the 'man versus machine' scenario has never really been considered (Cockburn, 1985).

The investigation was based against the background knowledge that:

Research is to be understood as original investigation undertaken to gain knowledge and understanding. It includes work of direct relevance to the needs of commerce and industry as well as to the public and voluntary sectors; ...the invention of new ideas...where these lead to substantially improved insights.

(Research Assessment Exercise, 1999 1.12, p.4)

Using a purely inductive methodology allowed the thoughts, common meaning and understanding of all involved in the interaction to be explored. As Shannon and O'Connor (2000, p.167) noted, it is only possible for radiographers to become 'truly patient-centred' when they have learnt to understand themselves.

CHAPTER 2

LITERATURE REVIEW

Overview of chapter

This chapter provides an extensive review of the literature; the amount of radiography research and related narrative is extremely limited in this field and tends to be reductionist in nature. It is therefore appropriate to draw upon a broad spectrum of educational philosophies such as sociology, psychology, and the disciplines of nursing and medicine.

Once a definition of technology has been discussed, the humanistic versus the scientific paradigms are further developed. Synthesis of the concepts and paradigms will then be attempted by deriving a conceptual model from the literature analysed. The user context, it is suggested, is significantly important in the study of any medical technology and this moves away from the perceived objectifying nature of the imaging technology. Many types of objectification are studied in order to develop a framework for the model.

Once the technological aspects have been explored, the discussion focuses on the human interaction relating to sociological and symbolic interactionist perspectives. The concept of selves and, more importantly, the multiplicity of selves within the interaction are considered. Professional identity and role also play a major part with some interesting literature from the nursing profession providing a good base for the development of theory in radiography.

Finally, the social concept of dramaturgical analysis is explored with a detailed account of Erving Goffman (1922 – 1982).

Defining Technology. (Section I)

The word ‘technology’ originated from the two Greek concepts: *Techne*, meaning the know how of making things and *Logos*, which relates to the rational order of things (Locsin, 2001). This might suggest that a clear and concise definition can be easily formulated however, in reality, the term ‘technology’ represents many different meanings, especially when considered from a variety of philosophical perspectives.

The term ‘technology’ can be applied in a very broad context, for example:

A dazzling array of images: a family of cloned sheep, a rainbow of designer drugs, a worldwide network of linked computers flashing information to millions, the chest wall of a patient after cardiac surgery without the telltale midline scar, a patient lying still in the rotating tunnel of an MRI scanner, a geneticist pouring over gels and test tubes in an attempt to unravel the deepest mysteries of life.

(Caralee et al, 1999; p.1)

This gives a generic meaning to the term and it is from within this generic meaning that a search for a definition shall begin. This definition looks at the global impact of technology with the emphasis firmly upon medical technology. It refers to the ‘bits and pieces’ of technology, which could be termed ‘hard technology’, with allusion to computers, MR scanners and test tubes, but also, the impact upon the recipient, which equally could be expressed as ‘soft technology’, where important consideration is given to the family of cloned sheep, the patient’s cardiac scar, and the person lying in the MR scanner.

Technology has historically been seen as a major indicator for the progress of humanity, and this is especially the case in medicine (Barnard, 1999) since, in healthcare, symbols of science are more real and more prestigious than symbols of caring, and medical technology has a semiotic primacy over caring in Western cultures (Walker,1994). This is evident within advertisements and technical reports about modern imaging where the hard technology is often promoted as the only consideration (De Wilde, 2001; MDA evaluation report, 2000; Siemens Medical Solutions, 1999) since it provides physicians with the ability to study physiological and pathological changes within the patient while the impact upon the recipient, in this case the patient, is either omitted or seen as of only secondary importance (Cesar,1997; McKenna Adler, 1990).

Conversely it is also claimed by a few nursing authors that technology can improve self-esteem, knowledge, efficiency in practice, and provides more time to spend with patients (Gaudinski,1979; Gordon, 1992; Huether,1978; Wilson, 1981). However, many disagree with this argument and believe that the modern 'glorification of technology' has led many to perceive medical technology as an obstacle to patient care (Benfield, 1979; Cesar, 1997; Cockburn, 1985; Curtin, 1984). In fact Ozbolt (1996) takes this argument a step further in seeing technology as actually impeding human interactions and blocking orderly or creative thought. This is in direct opposition to the original understanding of *Logos* and the rational order of things. There is an obvious conflict in trying to develop a true definition that encompasses the opinions of all health professionals.

The important global meaning of health technology as stated by the World Health Organisation (WHO), (1978), takes a two pronged approach; it stresses that the procedures and equipment must be scientifically valid, but also emphasises that technology must also be acceptable to all those who use it.

A further attempt at classification of the term can be viewed from the perspective of Brandt who believes that:

Technology is inherently neither good or bad, but rather, its impact depends upon its timely, effective, and humane application.

(Bandt, in Sandelowski, 2000 p. xiv)

This seeks to neutralise the aspect of hard technology and places the emphasis upon the human interaction.

Technology does therefore appear to be a multifaceted concept, we appear to be standing on 'shifting sands' trying to '*seek a purchase on the complex reality that is technology*' (Mitcham in Sandelowski, 2000 p. 21)

Technological definitions are varied, often conflicting, and usually context - specific. To try and develop a true definition across a wide range of technologies will be of little value (Orlikowski, 1992), so perhaps the goal is not to seek to lay claim to a definition but to understand the unfolding paradoxes and characteristics of technology (Barnard, 1999).

Hard Technology

Any study of medical technology may be guilty of paying too much attention to the physical 'objects' of the machines, i.e. the hard technology, to the

detriment of the socio-cultural and political frameworks that constitute the soft technology (Sandelowski, 2000). Hard technology usually brings to mind tools, machines and other hardware that dominate in their physical presence; it is usually possible to see, touch or hear the particular technology.

This is the case within a radiology department with huge 'machines' placed within rooms that are inaccessible to patients. The patient may not have seen the technology beforehand and until there is written permission for them to use the technology (medical request) they may be unaware of its existence. The initial sight of a CT or MR scanner, for example, can be very daunting for some patients (Murphy, 2001). The patient may be enveloped within the technology, often further confined within various imaging coils, with the roof of the gantry close to their face and the noise (Spouse and Gedroyc, 2000) making their initial relationship with the hard technology a very intimidating and intimate one.

Radiographers, as operators of the technology, probably view their working environment from a hard technology perspective; learning the functions, computerised controls and handling the physical machines. This all requires a high degree of training which encourages the radiographer to focus on the hard technology rather than the patient (Mc Kenna Adler, 1990).

Soft Technology

Strauss et al (1982), with reference to the sentimental work of nurses, gave credence to the fact that nurses have educated patients about new technologies, alleviating their fears, thus the profession of nursing has reflected upon the soft technology, ensuring the efficient, safe and compliant use of the hardware of health care. This is a point not shared by many authors. It would however be useful to consider if radiographers could, or should, be placed into the same category as our nursing colleagues.

The production of patient information leaflets, (Hogg et al, 2000; Tutty and O'Connor, 1999) research studies to reduce anxiety, (Gray, 1999; Mathers et al, 1999) together with a vast array of health and safety issues related to the technology within the department such as Quality Assurance, equipment inspections, and Ionising Radiation Regulations (IPEM,1977, IR(ME)R,2000) should all contribute to the safe and regulatory use of technology.

However, soft technology is conceptualised as much more, and is everything that the hard technology is not. Soft technology is about the technological impact upon politics, values, gender, morals, patient care and the humanistic interaction (Barnard, 1997; Cooper, 1993; Hawthorne and Yurkovich, 1995; Locsin, 1998; May et al, 2001; Ozbolt, 1996; Prout, 1996).

Most significantly, according to Nagle (1998), the introduction of soft technology has evolved to compensate for the potential dehumanising or disembodiment effects of hard technology. Social factors can be very influential

with respect to policy makers' values, and the effectiveness of the technology especially in terms of patient care (Kling, 1987). In addition, managerial or policy makers' intentions for the technology are often diverted from their intended course by social and economic forces (Orlikowski, 1992).

It should however be recognised that the impact may often be a two-way process between the individual and the machine. Foucault (1988) refers to soft technologies as the 'technologies of the self', the discursive means by which individual subjectivities are constructed and revealed. This suggests that the subjective nature of any human interaction with technology must consider what Cussins (1996) terms 'agency' (individual actions of the self) within a technological environment.

Bernardo (1998) introduces the theory of 'True Presence' into the argument that emphasises that the patient perspective, not that of the health professionals, is the focus of all efforts in patient care and service within a technological setting. It is also one perspective that is often neglected. This is particularly evident in the study of the impact upon the radiology departments following the introduction of Computed Tomography scanning technology, (Barley, 1986) which fails to consider any patient perceptions:

To understand the perspective of the patient is to be truly present. Hence identifying, acting on, and evaluating care and service based on the patient's perspective clarify responsibilities, expectations, and accountabilities for nurses who believe that the focus of the discipline is the unitary human health process as lived and experienced by individuals.

(Mitchell, 1997 in Bernardo, 1998 p.42)

Therefore any attempt to understand the medical technology must place at its centre the perspective of the patients and the complex characteristics of the soft technology.

The composite relationships of soft technology will become more evident as the literature unfolds in leading the technical professional to seek to understand the focus of the technological experience not as a purely scientific phenomenon, but as a human being. It will also be evident that soft technology is constructed from the personal experience of the technology, history, subjective self, and social reality of human science (Charon, 2001; Cockburn, 1985; Goffman, 1959).

Failure to Recognise Soft Technology.

Radiography as a profession has failed to critique or inquire into what is, after all, a 'technology driven environment' and as a result there is inadequate consideration of radiological technology that examines its emergence or impact on both society and the profession itself. Kevles (1997) does provide a historical critique of radiology but Kevles is not an imaging professional. This failure, also recognised within nursing, where there is a much larger research base, is a scarcity within society and fosters conjecture related to the experience of technology (Ellul, 1964; Mumford, 1968; Illich, 1976; Heidegger, 1977; Ihde, 1991; Pacey, 1983; Postman, 1992; Purcell, 1994). This is likely to lead to a poor, or isolated outlook on the meaning of technology where the characteristics of soft technology are not necessarily considered.

According to Locsin (2000), the one true meaningful way that a nurse can know persons in their wholeness, is through technological competency, since this is an expression of caring in nursing. Although all nurses might not agree with this proposition, the parallels to be drawn within radiography are clear to see, however it could be argued that within radiography, technological competence is not so much a desirable skill, as an essential one. Like nursing, (Sandelowski, 2001) if radiographic technology is still naively perceived, even within radiography research, as an automated application of only hard technology, any attempt to define the role of the radiographer reduces the professional to merely performing a manual task, with the mindless application of medical science delivered on orders from physicians.

The profession should take note of the potential dangers of technology to ensure that we do not get to the point whereby it can be proved that “It is appallingly clear that our technology has surpassed our humanity” (a statement attributed to Einstein in Sandelowski, 2001, p.7), these few words graphically demonstrate the inverse relationship between hard and soft technology; between scientific objects and humanity.

The Conceptualisation of Technology.

In order to understand the increasingly complex nature of what technology is, a conceptual model shall be derived from the literature. Historically the link between Western technology and science has been reasonably straightforward with the technology being viewed purely as an inanimate object which,

together with the health worker, had been symbolised as ‘servants to physicians and the general public’ in their battle against health ailments (op.cit. p.3).

Technology used to be more associated with art and craft by:

“Virtue of an emphasis on design, aesthetic vision, utility and skilled making”

(op.cit. p.33).

Some of these attributes are still evident today, where efforts are increasingly made to present the medical imaging technology in a pleasing, user friendly manner. Paediatric departments in particular tend to place such things as cartoon stickers and animal designs on their radiology equipment. Even some radiology equipment manufacturers design equipment with this point in mind (Siemens Mobilett, 1999).

The change in emphasis to move away from the actual practice of science towards theoretical products was inspired by historians, social scientists and critical theorists who challenged the text book image of technology. This move was brought about in the 1960s in the light of growing concern over the impact of newer technologies (Locsin, 2001). This is not unlike the discovery that the revolutionary Rontgen rays were, in fact, especially in their early years, responsible for developing tumours with potentially fatal consequences (Kevles, 1997).

Technology as Neutral.

Lack of research into sociological aspects of technology is not unique to radiography (Mc Kenna Adler, 1995) or nursing (Ellul, 1968). It is an area of deficiency within all healthcare research (Barnard, 1997; Brunt, 1985; Harding, 1980; McConnell, 1990). It is unclear if this is due to the fact that technology is not considered to be influential.

The common theme within the literature is predominately deterministic and supports the notion that technology is composed of no more than physical machines (Barnard, 1996). It is suggested that the rationale for this is that technology is considered by the majority of healthcare professions to be a neutral influence. This assumes that machines only solve problems and humans make the necessary decisions; technology serves humans as masters. Other considerations such as politics, values, and morals are supposedly not part of this neutral assumption. Carnevali (1985) is typical in this neutrality view, suggesting that it is a convenient stance for patients and clinicians to adopt, while Ashworth (1987) considers technology as a benefit to all using the expression 'mechanical servants' that are completely separate from any values. Mechanical servants presumably act according to instructions and perform a task without questions or social influence. Similarly, technology is described as nothing more than a tool (Adams, 1986) that is a separate entity to any historical, political and cultural influences (Mander, 1978).

Nurses are expected to overcome these social influences by recognising even the most sophisticated technology as merely clinical apparatus (Laing, 1982). Locsin (2001) agrees that a purely mechanistic interpretation will assist nurses to manage technology, but recognises this will also destroy the relationship they may seek to create with the patient.

There is no literature available that seeks to analyse how radiographers view their own imaging technology, or whether the adoption of a parochial view, as suggested, would indeed overcome the many influential factors that impinge upon imaging technology.

It is recommended that this view of technology as neutral may be achieved by moulding the technology to meet the requirements (Clark, 1968; Laing, 1982; Maloney, 1968; McConnell, 1991; Rowan, 1996; Salmon, 1969) to perform the task and nothing else; in this way the technology would indeed serve as a mechanical servant. However, in this respect, the issue of the impact upon patient care is either skilfully avoided or afforded little meaning.

The inability of society to appreciate and instigate development in technological areas is the main reason cited for technology being appreciated as simply neutral (Brinkman, 1971; Cotgrove, 1982; Mander, 1978; Pacey, 1983; Postman, 1992; Purcell, 1994; Winner, 1986). The belief is, according to Cotgrove (1987), a strong sociological paradigm that humans are both masters and manipulators of technology. This assumption follows the biomedical

model and views technology uncritically as the 'champion of health care services' (Barnard, 1997 p.127).

However, the outcome of a technological investigation may only be considered as positive or negative, but certainly not neutral (op.cit. p.128). The same may be said of imaging technology that will confirm or exclude the presence of pathology, reassure or compound the concerns of both patient and clinician. However, a totally neutral outcome is not an option. Although this neutral assumption is seen by many to be a feasible approach, it fails to appreciate the complex nature of technology. Technology is more than this since it represents culture, symbolism and a division of power (Barnard, 1997). The external authority on technology is seen to be considerable (Simon, 1999, Cussins, 1996).

Push and Pull Technology.

The theory of 'demand pull' and 'technology push' (Freeman, 1987, Robertson, 1998) is said to be the catalyst for debate amongst historians and economists of science and technology. These factors are also probably directly influential in radiology where demand for high technology imaging has been increasing almost exponentially and the manufacturers of imaging technology are operating within very competitive and limited markets (Cannon and Barley, 1999). Freeman's point in Locsin (2001 p.171) is very valid, he states that:

The push from technologists who wish to promote technical advance is hard for society to resist, as new applications for these developments are identified continuously.

The development of new techniques in medical imaging, especially within MR, would authenticate this claim (Suzuki et al, 2000).

Robertson (1998), was very critical of the pull/push scenario when a technology was seen (in his case in nursing) to change practice for no obvious benefit. However, it could be argued that without research and experimentation with early technology, that may have reaped little initial benefit, more significant technologies might not have developed. The primitive attempts at conventional tomography leading to the development of sophisticated Computed Tomography being an illustration in radiology (Cormack,1982), or the B mode ultrasound machines that showed little detail (Kevles,1998) but led to the development of colour flow doppler machines today.

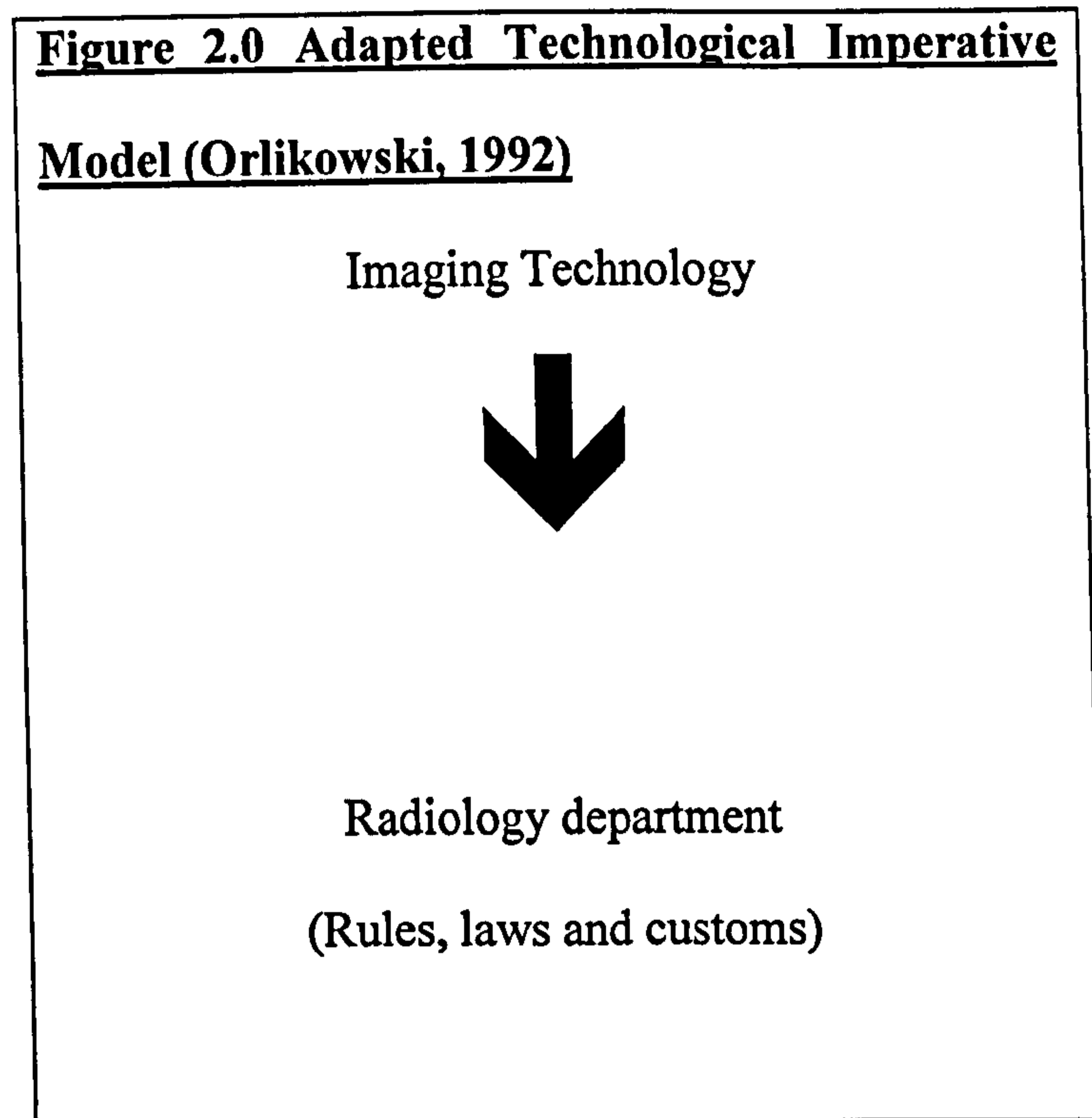
Technological Determinism.

Greaves (1998) and Wilmot (1993), pursue the conceptualisation of technology from within technological determinism which has two opposing theories:

1. Hardware-led determinism.

This suggests that social change is always determined by an autonomous technology, which is independent of social influence. As a result of the technology, rules, laws and customs follow on, the introduction of computers and information-technology being a prime example of this in modern National Health Service (NHS) Trust hospitals. This theory assumes that social development is achieved by technology alone and that the technology causes change. For this reason, technology has become the driving force in healthcare

as we enter into the twenty first century (Nagle, 1998). Orlikowski (1992) refers to this component of the technology concept as the 'technological imperative model' (ibid, p.400) as illustrated in figure 2.0.



Explanation of Figure 2.0

This shows that the sole factor influencing social change in the radiology department would be the imaging technology. This perspective treats technology as an independent influence on human behaviour or organisational properties, that exerts unidirectional, casual influences over humans and organisations, in this case radiology rules, laws and customs. This model disregards the action of humans in developing and changing technology. It would appear that this interpretation, although justified within the literature, is too simplistic, indeed Orlikowski (1992) only uses this model as a precursor

for the development of others, since it does not consider any socio-cultural aspects to have any influence upon the technological organisation.

The opposing view is that of:

2. Soft technological determinism.

This also views technology as the primary cause of change, but takes some account of social factors with possible barriers that may soften the blow from technological change. This tends to consider the reaction to, rather than the impact upon, the technology (Locsin, 2001). It is still, however technologically determined, and therefore seen as a result of the technology, where:

The impacts are moderated by the human actors and organisational contexts

(Orlikowski, 1992, p.400).

Technological determinism is said to replace the mechanistic view of traditional physics with a mechanistic view of technological development, determined by laws that cannot be changed by human decision. It is therefore open to the same arguments as traditional determinism:

That technology determines the nature of our value system and social relations, rather than recognising that it is the other way round; that our values and social relations determine the nature of our technology.

(Carpa in Locsin, 2001 p173)

Such a perception precludes us from seeing how technology and humans, not only act simultaneously, but are also 'acted upon' (Timmermans, 1998). The power of a technological device to shape an interaction cannot be

predetermined, it has to be realised in practice and take account of historical, social, and cultural factors (op.cit. p.369).

Warnock (1998) believes that the human mind cannot be drawn into the causal chain of the deterministic view since there is no secure philosophical basis for technological determinism and it only encourages a narrow view of a very complex area. Timmermans (in Barnard and Sandelowski, 2001, p.369) argues further that 'technological deterministic arguments dislodge technological innovations from their performance contexts.' It is therefore, as suggested in Locsin (2001), becoming apparent that the recognition and focus of technology should be towards humanistic values.

Technological Performance.

The humanist view is becoming increasingly popular within current literature and this was apparent in the search for a definition of technology. There is almost a temptation to shift the whole focus of any technological study firmly into the humanistic paradigm in order redress the balance between humane care and hard technology.

Research indicates a definite boundary between person and machine, which until recently was assumed to be problematic and very authentic. This continued polarisation might, it is suggested (Barnard and Sandelowski, 2001), comprise a discourse that is to the benefit of maintaining a distinctive professional identity to the detriment of patient care. It appears therefore that it may be in the interests of health care professionals to maintain the perceived

boundary. This, together with the convenient stance that technology is neutral, (Carnevali, 1985) could suggest that a possible deviant type of philosophical culture may exist amongst health care workers in high-technology environments. This type of behaviour would obviously be undesirable but could be linked to what Goffman (1959 p.141) called 'dark secrets'; these are facts that a team conceal from their audience in order to present the appropriate self image. The technological literature per se does not appear to make this conceptual bridge so it should be recorded with some suspicion at this stage.

Barnard and Sandelowski (2001) in particular challenge the existence of the perceived barrier between technology and care and in doing so introduce new arguments. It is apparent that non-human joints, genetic engineering, and artificial intelligence systems blur the boundaries between animate and inanimate, man and machine (Balsamo, 1997; Channell, 1991; Haraway, 1991). Lupton (1994) believes that Western medicine has long conceived human bodies as machines. These assumptions would indeed blur the perceived boundaries and present human beings as 'technological artefacts' (Oldenziel, 1998, p.181). Modern technologies such as organ transplantation, challenge existing notions of a unified embodied self (Sharp, 1995 p.361).

Casper (1994) develops this argument further by locating the foetus at the margins of humanity; in the gaps between the dualism of human and non-human, since in many areas the foetus is no longer just a 'natural' creation, especially within infertility clinics. Medical, sociological and anthropological research on technology has tended to see technology as merely 'props' that facilitate social action (Prout, 1996, and Timmermans, 1998).

Prout (1996), using what is referred to as the Actor Network Theory (ANT), rejected the notion that society is constructed through human action and meaning alone and that the technology itself plays a part. The ANT view of humans and non-humans as similar, and the emphasis on the acts, not the actors, contrasts with deterministic versions of technology as 'alien to human beings and as stable causes of effects.' (Barnard and Sandelowski, 2001 p.369). Within this theory, technology, like humans, can also be conceived of as having agency, biographies, language and quirks (Orr, 1996; Prout, 1996; Timmermans, 1998).

The central theme of ANT is a non-dualistic account of the relationship between society and technology. The ontological extension of human agency to non-humans occurs when technological devices stand in for humans (Timmermans, 1998). The example cited is that of the metered dose inhaler, which when given to the patient, delegates biomedical work from clinician to patient. Prout (1996) argues that although the autonomy of the patient is extended, it is still limited due to fact that the inhaler is still controlling the dose. It is therefore the technology itself, not the clinician or the patient, that is the controlling influence. The significance of automated scanning protocols, with table movements, and automated breathing instructions within radiology should also be considered in this context. It is not the imaging technology determining the outcome of the interaction, but the performance or the role of the technology within it.

This theory tends to be loosely associated with some feminist scholarship (Davies, 1995, Witz, 1992) that considers the relationship of gender and professional interests to the role of technology in reproducing medical organisational power. However the recognition that the technologies are also participants in the social interaction is not always made clear. Strauss et al (1985), for example, claimed to take a dual approach, by considering both deterministic and human values, in their detailed ethnographic study of the social order of medical work, but they are criticised by Prout (1996), for not theoretically crediting the machines (technology) with doing any work themselves since the focus is firmly on the human actors to the neglect of the non-human performance.

Agency through Objectification.

Substantial literature deals with the dehumanising effect and objectification of patients during high technology procedures (Cooper,1993; Locsin,1998; May and Fleming,1997; Ozbolt, 1996; Purnell, 1998). The objectification of patients within radiology departments, although identified, has only ever been addressed at a very superficial level (McKenna Adler, 1990, Spouse and Gedroyc, 2000). It was argued by Emerson (1979) that the 'self' must be removed in order to sustain the medical definition that the professional is working on a technical object not a person. Only by doing so can the health professional maintain control and legitimise their authority. This point, in addition to the theoretical possibility of deviant behaviour, begins to portray a very unfavourable picture from the literature of patient care within high-technology areas.

It is also clear however, at least at a superficial level, that many studies have considered the needs of the patient and their interaction with technology.

Cussins (1996) questions the humanist argument that selves need to be protected from technological objectification to ensure agency (express subjectivity for oneself) and authenticity, since 'objectification of a patient's body is not in itself a dehumanising activity' (Van Manen, 1998, p.8). In her original study within infertility clinics, Cussins found that infertile women often asserted themselves through objectification. This was largely dependent on the outcome of the ultrasound scan, that is whether or not she was pregnant. Not only did she find that the women's selves varied but also their perceptions of their own objectification changed according to several different classifications. The most relevant being 'medical operationalisation' within an imaging context:

Whereby a woman is at one time and in one place a generic patient, and at other times and places a set of ovaries and follicles on an ultrasound screen.

(Barnard and Sandelowski, 2001, p.369)

This rendering visible of the body parts could equally apply to any area of diagnostic imaging that creates another world inside the body accurately represented by computer images (Rhodes et al, 1999).

If patients being imaged feel this multiplicity of selves, this will, as part of the conceptual model, add to the understanding of the interaction by considering

agency through objectification. It was felt by Cussins (1996) that the patient is subjected to a continuous ontological exchange between selves and the environment. The synecdoche (a figure of speech in which a part is made to represent the whole and vice versa) relationship by which a specific part comes to represent a whole personhood was considered vital to maintain subjectivity and agency. Only when this relationship broke down did alienation and objectivity seem to occur (op.cit. p.585)

Cussins (1996) also studied why the women's feelings of objectivity fluctuated between positive and negative. Naturally negative objectification was associated with failing to get pregnant, but it was not usually seen as a failure of the self (own body), but rather, a failure of an organ or a failure of the technical procedure. Therefore the synecdochal relationship remained intact.

Whether the failure of imaging technique to diagnose a pathology is viewed in similar terms, that is a failure of the technology and not the self, is not known. From this research the term 'Ontological Choreography' was derived to express the role of health care professionals with regard to the maintenance of 'referential supremacy' (ibid). This enables the actor to control and direct the nature of the interaction from within the reality of the medical examination.

It is therefore suggested (Ibid) that objectification is not always in opposition to the goals of the person and under certain circumstances the self can manifest agency and so enact subjectivity. If objectification is antithetical to personhood it will only occur under certain conditions and can therefore be

understood from a different perspective. Several other types of objectivity are also identified. Each one can be considered as having credence within an imaging department.

Naturalization

Here the patient moves from being a 'normal' social actor in the waiting room, to being stripped from their natural environment by undressing and losing their usual identity. The social actor then becomes an 'object of study' viewed from many angles while their multiple social roles are temporarily suspended (op.cit.p.596). This is particularly the case in radiology.

Bureaucratisation

Only the patients' generic qualities are relevant in this situation: they should arrive on time, come through when instructed and behave in the expected manner. In this case the patient is 'objectified in a non-specific, bureaucratic sense, and is a token of a generic patient.' (op.cit.p.597). It is an expectation of the staff that the patient will behave accordingly, a point also made in sociological studies (Lupton, 1996).

Epistemically Disciplined Subject

This is the level of background knowledge about their medical condition which the patient is privileged to have acquired. In essence this is patient education. Despite access to a plethora of patient information in radiology departments, it remains unclear and under-researched, whether patients' knowledge of medical conditions and the technological processes have increased to any extent over

the last decade (Mathers et al, 1999, Murphy, 2001). Lupton (1996) believes that only middle social class lay people will take the opportunity to acquire background knowledge. This type of objectification serves to portray the practitioners as experts and the procedure as legitimised. This is different to the medical definition (Emerson, 1979) and is seen to facilitate the movement of authority and accountability.

This has major implications since it appears that objectification of the patient, like the further polarisation of distinct boundaries referred to earlier, may be desirable for healthcare professionals, in terms of maintaining a 'power differential,' and that positive objectification may be linked to a positive outcome if there is a good diagnosis for the patient. A cautious approach must however be applied since the environment, experiences and outcomes of an infertility clinic are very different from that of a radiology department. The patients, in the former, do not have an illness and may have invested emotions and finance into a positive outcome.

Legitimation by Objectification

According to Rhodes et al (1999) visual objectification, or medical operationalisation, by MR scan of the human body provides either positive experiences that encourage patients to align with their medical providers or, alternatively, negative experiences which lead to alienation. This retrospective analysis of patients having MR scans concurs with the synedochal relationship (Op.cit, p.3). If the experience or outcome is negative and the patient loses any agency, the medical staff and the technology are criticised.

It is noted however, that tests performed in the Rhodes study investigating chronic back pain, using MRI as the diagnostic test tool, would reveal spinal anomalies in a high percentage of patients without any symptoms, thus showing that the correlation between test results (outcome) and patient experience is a complex one (Jensen et al,1994). It appears that patients need to identify the cause of their problem in order to legitimise the need for the medical test. The images seen by some of the pain patients, while negative in their nuance, offered a 'sensuousness and concreteness' (Rhodes et al, 1999, p.1193) similar to the impact on a pregnant woman viewing her foetus on an ultrasound image (Cussins, 1996).

Occasionally the request for imaging sometimes comes from the patients themselves, this can probably be viewed as a form of epistemically disciplined subject (Cussins, 1996). One patient stated:

..the MRI study is the only thing that is going to tell them what's wrong, where the root of the problem is.

(Rhodes et al, 1999, p.1194)

This presumably can lead to potential conflict that threatens the precarious nature of the ontological choreography and referential power between patient and practitioner. If alienation occurs it can be in response to, not just a failed test, but a reluctance on the patient's behalf to have the investigation in the first place.

With a degree of knowledge the patient may feel alienation towards the physician who has control over the technological tests, since the referral pattern

and most appropriate test may differ from that expected by the patient (Mc Phillips-Tangum et al, 1998). It is felt that this information could only be gained by sensitive questioning of the patients themselves.

Objectification by Technique

Postmodern descriptions of technology seriously challenge the biomedical model and radiographers may see their role as bridging the divide between technology and humane health care (McKenna Adler, 1990). Nursing studies have identified their own profession as mediators between these disparate forces (Cooper, 1993; Gordon, 1992; Halm and Alpen, 1993; Pelletier, 1994).

However, it is suggested that the skills and knowledge that health care professionals develop with modern technology have served mainly to increase prestige and power to their own advantage in order to advance the profession. As previously discussed, health care professionals may actually be guilty of widening the divide with ontological choreography, medical definition and reinforcing the perceived barrier between person and machine (Barnard and Sandelowski, 2001; Cussins, 1996; Emerson, 1979). In this instance professional expertise is referred to as 'technique' and is evolved from human, organisational, political and economic frameworks (Barnard and Sandelowski, 2001). Many philosophers have emphasised the importance of technique over the physical technology (Ellul, 1964; Freenberg, 1999; Mitcham, 1994; Winner, 1977,). Technique does not however deal with phenomena such as cultural or personality differences. It is suggested (op.cit. p.372) that individual feelings and meanings can themselves only become technique, if

they are recognised and categorised as part of practice protocols. However this seems unlikely when current trends in healthcare place too much emphasis on the maximization of efficiency within specialised practice (ibid).

This maybe particularly relevant in imaging departments where the requirement to scan a greater number of patients (Murphy, 1999) and the developing nature of interventional radiology may neglect the individual's feelings in order to maximise efficiency. This may lead to a type of 'assembly line' practice that was referred to by Benfield (1979) and the Bowman model (1993) also refers to 'input and output,' this seriously questions whether humanity is being compromised in the process.

It is seen therefore that technique, not hard technology, is the decisive factor that makes practice 'technological' (Barnard, 2001). Burbles and Rice (1991) regard the problem not so much with the technology, but rather, in the discourse associated with technology. Professional discourse, it is claimed, often reflects opposing realities where more talk of humane care means less humane care. By placing a strong emphasis between the technology and care:

We may be focussing on differences that either do not exist, or do not matter, and thereby diverting ourselves away from the differences that do. A question that we must answer is whether the discourse of difference surrounding technology is preventing us from recognizing the technique that can undermine humane care?

(Barnard and Sandelowski, 2001, p.373)

Another reason for giving legitimacy to this difference between humane care and technology is that it can protect and promote the power of the professional over the lay person thus advancing the status of the health professional. Munro

(1997) claims that this difference is exploited specifically to meet these ends. This division is itself a type of technology, an 'artefact' (op.cit.p.4) through which health professionals make discernible their contribution to health care (Gordon, 1991).

However, like nursing, radiography has not adequately considered if the boundaries between technology and care actually exist. The paucity of research in this area indicates that the arguments related to division in radiography have yet to be addressed at any level. It is however an important question that does need an answer since as Barrett (1987, p.35), notes, 'sites of difference are also sites of power.' We may be guilty, as the literature cautions, through techniques, objectification and deterministic perspectives, of sacrificing human care to efficiency and perceived professionalism.

Dualism and the need for a paradigm shift.

Lupton (1994) argues for the bringing together of perspectives in order to recognise the distinctive points of each while, at the same time, paying careful attention to the points at which they merge. The entities should not be considered separately since 'one is in the other, as opposed to the one (that is technology) existing exclusively as Other to the human' (Gadow, in Barnard and Sandelowski, 2001p.369).

Heidegger (1977) believes that technology is a means to an end; an instrument as well as a human activity. Several other authors (Cooper, 1993; Hawthorne and Yurkovich, 1995; Nagle, 1998; Purnell, 1998) also refer to the concept of

duality within technology since both a mechanistic use as well as a humanistic value are mentioned, as in the definition by Caralee et al (1999). This interpretation is supported by McConnell (1998) whose understanding of technology places nurses at the midpoint of technologic-humanistic dualism. Whether radiographers as technical operators of modern technology, working within a profession that prides itself on holistic patient care (Murphy, 1999), also sit at the midpoint of this dualism, is questionable. It has already been argued that radiographers cannot function without the hard technology of their 'imaging machines'; whereas nurses may view technological tasks as an adjunct to their daily work, radiographers are wholly dependent upon it. If, again like nursing, (Locsin, 1998) radiological technologies are used for the sole purpose of 'procedural efficiency' this can only sustain the idea that radiographic practice is just about technological competence. This notion that the more professionals become immersed in technological products of science, the less they care about the recipients is supported by Ozbolt in Purnell (1998, p.13) who notes: 'technology seems designed to free the nurse from caring'. These comments would appear at face value to be undermining the professional status of health-care workers. However, it is only by understanding the dualism and paradoxes that construct technology that radiographers can truly fulfil their professional roles.

In order to do this radiographers need to know the truth about themselves, others and power that comes with technology, and this requires a paradigm shift (Hawthorne and Yurkovich, 1995). This would involve moving from a 'paradigm of control' (technology) to a 'paradigm of relation' (humane care)

(op.cit.p.1090). The extent of this dichotomy is also highlighted by Jones and Alexander (1993), who consider technology and caring at the opposite ends of the philosophical spectrum. The literature points towards a paradox of perspectives with technology representing a mechanistic perspective, while caring is seen as the humanistic perspective.

A research study that exposed the dilemmas of technology and the need to consider a paradigm shift was a study of an hospital environment that epitomises the technological- caring dichotomy that exists on an Intensive Care Unit (ICU). Cooper (1993) observed and interviewed nine nurses over a period of four months. The findings revealed that technology impeded care by promoting power and knowledge differentials within the staff on the unit. The ICU study is a very powerful indicator of the dualistic effect of technology, and with the distinct lack of any such research in radiography, with the exception of Barley (1986, 1990), the findings should be noted in relation to the imaging technology environment.

It has been alluded to previously that one of the most important aspects to consider is not hard or soft technology, but rather the context in which the technology is used, this premise is now given consideration.

User Context.

It is argued that what determines if a technological experience, such as a CT or MR scan, is dehumanising, is not in fact the technology itself, irrespective of

how it may be defined, but how the technology is used within society (Barnard and Sandelowski, 2001).

The importance of considering the specific user context when studying technological interactions is very eloquently expressed by considering that:

A stethoscope is what it is physically. But even more importantly, the stethoscope is also what it becomes in a specific user context; the stethoscope is, among other things, an instrument of diagnosis, an extension of the ear, a symbol of science, and a bid to a higher social status.

(Sandelowski, in Barnard and Sandelowski, 2001 p. 369)

Similar arguments could be extended to modern diagnostic imaging equipment since it is not just the physical appearance that provides a detailed conceptualisation, it is symbolic in many different ways, and has different meanings for radiographers, patients and clinicians. A CT or MR scanner may represent a diagnostic tool and symbolic status to the radiology department, a miracle of science that will legitimise the ailment for the patient and finally, to the clinician, it may provide an outcome and a treatment plan.

The only research literature that refers to user contexts, with the exception of Barley (1986, 1990), and medical imaging technology, is within ultrasound. The impact of the ultrasound machine reportedly depends solely on how it is used rather than the deterministic design of the technology (Sandelowski, 2001). The users are not considered to just be the operators of the machine, but inherent with what the philosopher Don Ihde (1990), refers to as 'user-contexts', while other social scientists seem to prefer the term 'interpretive flexibility of technology' (Orlikowski, 1992; Pinch and Bijker, 1984).

For the physician, the ultrasound machine is, amongst other things, a diagnostic tool for monitoring foetal development. For the expectant parents it is a device to capture their first glimpse of their baby. To the entrepreneur or struggling hospital, the technology gives them the opportunity to sell the ultrasound images and make some financial gain (Sandelowski, 2001). This may be viewed as a natural consequence of using the technology since Benyon (2000) found that patients are usually unaware of the purpose of their scan and the role of ultrasound in prenatal diagnosis. Still further, pro-life campaigners may use the same image from the same piece of technology for propaganda, or the technology may even be perceived in terms of commercial use in advertisements for motor cars (Ibid). The ultrasound machine is therefore seen to have many users and a multitude of different meanings, where the technology has user-contexts far removed from the medical field.

This extends the power of the technology beyond any deterministic or dualistic interpretation and focuses instead on social interactions and cultural constraints. Empirical studies employing this social constructionist view of technology have demonstrated how understanding and meaning are sustained around technology (Bijker, 1987; Pinch and Bijker, 1984).

Marxist accounts of technology (Cooley, 1980, Edwards, 1979) overcome the implication that it is only powerful actors who have the authority over technology by highlighting the role of all human agents in considering how technology is interpreted and operated. The social constructionist perspective is referred to as the 'Strategic Choice Model' and is illustrated in figure 2.1.

Such is the influence of technology that it can push and pull the user in certain directions, (Locsin, 2001) in a similar fashion to the pull/push deterministic role of the technology discussed earlier. This type of potential power, has been described by Bush in Sandelowski, (2000) as 'valence', that is, like atoms, the technology is 'charged' and under the correct conditions will influence all around it. The example given is the gun, 'valenced to violence'; its mere presence increases the opportunity for killing; it is however completely dependent upon the user and the situation (Sandelowski, 2000). Unless the user has the knowledge and ability to aim and pull the trigger the gun cannot be used to kill from a distance.

Imaging technologies change not only what we see but the way we see it. Lerner (1992) identified that CT images are not actual representations of the human body, but, rather the result of multiple x-ray projections of a cross-sectional elucidation of the body following a mathematical algorithm. They visualise the body-part in terms of density and contrast in the form of computer pixels. It is therefore reasonable to suggest that a CT scanner is 'valenced to image body parts' but without the correct operations and interpretation of the pixel densities, the technology itself cannot produce the desired outcome.

In his longitudinal study of the impact of CT scanners on two radiology departments, Barley (1986, p.106), concluded that the scanners 'became social objects whose meanings were defined by the context of use,' while the physical format of the imaging technology remained fixed over time. This should not imply that the physical presence of the technology is ignored, the style and

features may alter user behaviour. Cardiac monitors are said to 'mesmerise' and 'dramatise' simply by virtue of their presence. Flashing lights and beeping sounds are no more evident than within radiology departments and can be seen as 'dramatic and exciting...attention-getters...that distract our eyes from the patient.' (Sandelowski, 2000, p.30). It is under these circumstances that, although the technology is also part of the performance (Prout, 1996), since it is itself acting out a role, it is an adjunct to the user-context.

The user-context is also significant if the technology requires repairs or produces artefacts on the image. In these cases the human user can modify and work around the technology itself (Sandelowski, 2000). This may modify the level of objectivity and thus the entire technological experience.

It could be argued strongly from a sociological perspective however, that this view alone of user-context theory is inadequate to produce a model of the conceptualisation. It is however a key component and very relevant to imaging technology. The complex interaction of social reality that occurs is far removed from the deterministic, technological performance or dualistic theories discussed. It is for these reasons that any medical imaging procedure cannot be completely routine and will always remain a unique experience.

Structuration Theory.

In spite of the general tendency of the literature to criticise technology for not appreciating the paradox of perspectives, there are still those who assert the existence of a harmony between technology and care (Ozbolt, 1996).

Orlikowski (1992, p.398) takes a unique approach to the complications identified in trying to develop a conceptual model. She is critical of both the deterministic and the humanistic concepts for being inadequate, and develops a new theoretical model to combine both perspectives in order to obtain a deeper and more 'dialectical understanding' (Ibid), that would also serve to facilitate future research. It is on this basis that full deliberation is given to this final theory.

This unique model is focussed on the impact of technology upon the organisation and draws on the theory of structuration (Giddens, 1984). Using structuring as the theoretical basis was deemed necessary since research on technology's influence on organisational structure has been confusing and contradictory (Hickson, Pugh, and Pheysey, 1969). The need to consider the organisation as well as the individuals was highlighted (Strauss, 1978), since all negotiations are constrained by previous interactions with the institution. In addition, one cannot seek to understand technology without examining how technology is incorporated into the life of organisation members (radiographers and radiologists), this together with 'True Presence' (Bernardo, 1998) (patients) would attempt to produce the complete picture of the reality of imaging technology.

Orlikowski (1992) identified three specific models of technology from the existing literature. The technological imperative model, which is technological determinism, (figure 2.0) and the strategic choice model, which is user-context (figure 2.1), have already been addressed. The third model is particularly

relevant to this research since it involves a longitudinal study examining the impact on two radiology departments following the installation of Computed Tomography (Barley, 1986, 1990). This model of *technology as trigger of structural change* (figure 2.2), was conceived when it was found that the technology triggered a major change in the 'departmental structure by altering institutional roles and patterns of interactions' (Orlikowski 1992, p.402). Barley (1986, 1990) indicates that the role of technology is not as material cause or deterministic, but as a material trigger with specific social dynamics leading to structuring consequences, in this case, decentralisation. This is explained further overleaf.

Figure 2.2 Adapted Model of Technology –Triggered Structural Change

(Orlikowski,1992)

Before the introduction of technology

After the introduction of technology

Before Computed Tomography

With Computed Tomography

Department One

Complete decentralisation

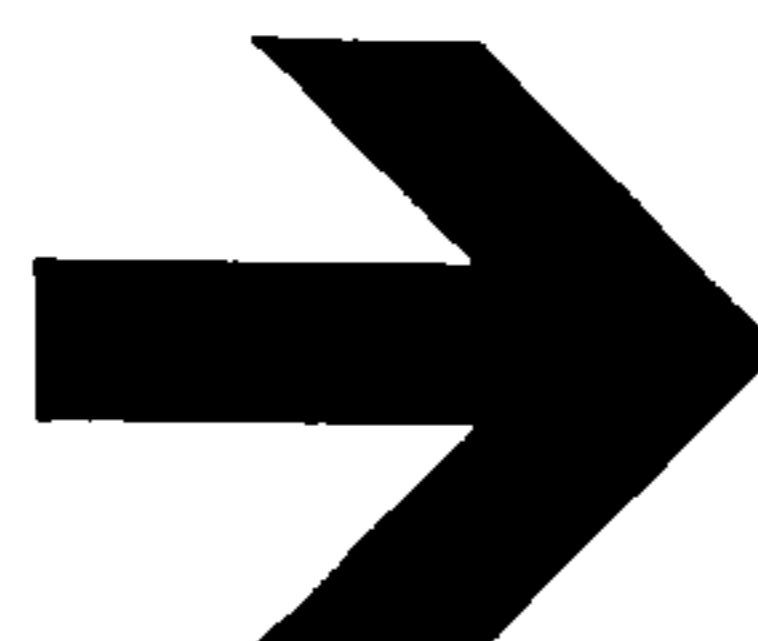
Department Two

Partial decentralisation

Radiographers novice practitioners

Radiographers expert practitioners

Time



Explanation of Figure 2.2

With the introduction of imaging technology, in this case Computed Tomography, the socio-cultural dimensions of the department change over time. The rules, laws and customs change to varying degrees within departments. The figure shows that department one changes with complete decentralisation, that is almost a role reversal between radiologists and radiographers, following the introduction of CT. This is contrast to department two where only a small shift in the radiology culture is apparent. Technology thus triggers a change in the roles and nature of humanistic interactions, where the influence depends on the specific historical process in which they are embedded (Orlikowski, 1992).

In order to understand figure 2.2 further, it is necessary to give a brief outline of the empirical study undertaken by Barley (1986, 1990) and the influence of technology within radiology departments. Orlikowski (1992, p.402), in giving credit to Barley (1986) felt that :

Technology [Computed Tomography scanner] is understood as a social object whose meaning is defined by the context of use, its physical form and function remain fixed across time and contexts of use.

Given that imaging technology is relatively stable in terms of standard functions, this observation would appear to be most appropriate.

The idea that structures are sets of rules that determine acceptable behaviour is further complicated by the fact that these rules are also being modified during the interaction. Therefore the study of structuring involves examination of how the 'institutional realm and realm of action configure each other'

(Barley, 1986, p. 79). The institutional 'template' with respect to radiology has been seen to be relatively rigid over time, this was particularly the case between the 1930s and 1960s, but the introduction of new members and new technology has the potential to distort the historical template (op.cit.p.88). A period of adjustment may then follow before the institution can reconfigure itself.

Barley (1986) observed and interviewed staff in two different radiology departments before and after the introduction of a new imaging technology (CT scanner). Although the aim and the methodology employed differ markedly from this research study, some of the findings are very relevant and merit further consideration. It was found that, prior to installation, (figure 2.2), centralisation was a key component of the radiology departments' structure and both departments made identical operational decisions. The template clearly demonstrated radiologists dominating and instructing radiographers with little or no interaction in the opposite direction. It was found that radiographers routinely waited for radiologists' instructions even when they were aware of the next most appropriate action. Even in mundane matters, authority was located or centralised with radiologists.

It is suggested that the rationale behind this is related to the fact that technological change in radiology had been very slow up until the late 1960s and it was therefore relatively easy for radiologists to retain their superior role. However, once the new technology was introduced (Figure 2.2), competency in skills related to the operation (radiographer tasks) rather than the interpretation

(radiologist tasks) of the resultant images were now required. Thus the trigger for structuring was metaphorically 'primed'.

Radiographers began to function without reference to a radiologist. There was at times reluctance from radiologists to reconfigure which was evident in the way that some radiologists still questioned radiographers' actions. The role of novice and expert were changing very slowly and with a certain amount of inertia. It was not always obvious and only by careful analysis was it made clear what the true meaning of the interaction entailed. For example, the radiographer who had already drawn up some contrast media, and knew it was required, still performed a type of 'anticipatory questioning' (op.cit.p.90), that served to preserve the radiologists status.

What remains unclear within the study is the reason why the changes in the organisation (due to interactions and technology, or (Orlikowski, 1992 p. 402) 'the occasioning of social dynamics that lead to structuring consequences,') were so slow to evolve. Equally, it is not clear if they were representative of other departments, or if, more than two decades later, other radiology departments are still actively undergoing reconfiguration today. With MR scanners being a relatively new acquisition for many District General Hospitals this indeed may be the case.

The study indicated amongst other things that in time there was, in certain circumstances, a role reversal, with data revealing radiologists questioning

technologists about pathology. In addition, an interesting element of blaming the radiographer for technological problems outside of their control was found.

Structuring was changing the departmental roles and for some:

The radiologists' moral authority was tarnished and the technologist began to regard the inexperienced radiologist with disdain.

(Barley, 1986 p.93)

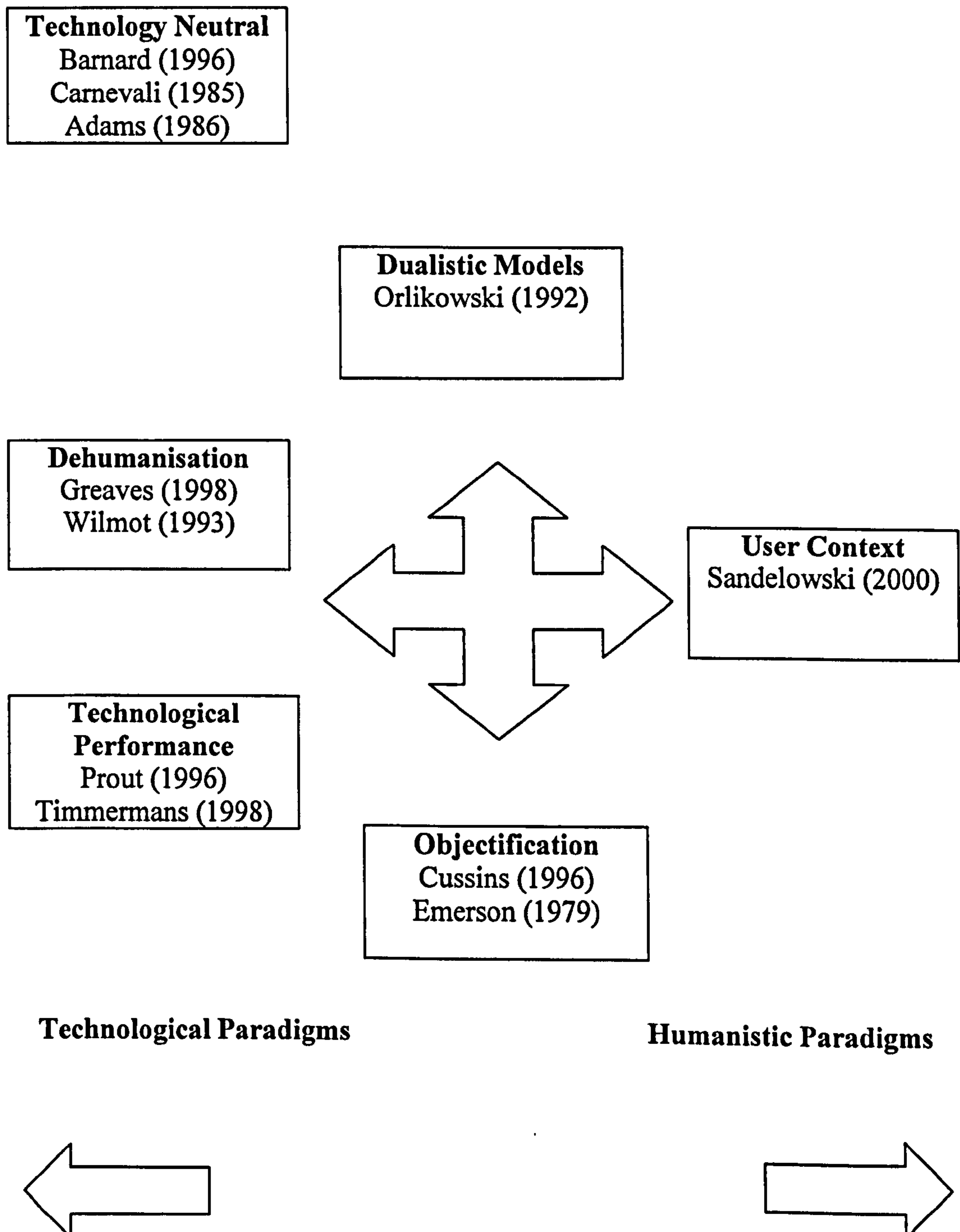
If role reversal was not a common feature, CT technologists' autonomy over the day-to-day working with the new technology certainly was (ibid). Although different interactional orders were identified in the two departments, thought to be due to varying degrees of experience within each grade of staff and the role of the actors involved, the theme of decentralisation was very apparent in both.

To summarise Barley's study; identical technologies were seen to cause, or occasion, similar dynamics that led to different consequences in terms of structural outcomes, with one department becoming more decentralised than the other. Computed Tomography scanners occasioned change because they became social objects whose meanings were defined by the context of their use and they symbolised triggers for change. It is suggested that structuring is a form of soft determinism that is embedded in the historical roles and rituals of the department (op.cit.p.107). This final theory in the conceptualisation of technology does therefore offer an alternative perspective that is specific to imaging technology and dualistic in nature.

Summarising the Literature of Technology

The complex interrelations between the theories studied are illustrated in Figure 2.3 below and explained in full overleaf.

Figure 2.3 A Conceptual Model of Technology (literature)



Explanation of Figure 2.3

The conceptual model of technology, derived from the literature, posits the importance of each theory in terms of its influence with respect to the other theories. In addition the model helps to summarise the paradoxes following immersion in the literature. It will be interesting to see how this conceptual model compares to the model at the end of this research study.

The model shows that technology-as-neutral is independent and does not heavily influence the other concepts to any great extent. It is however, a predominately technological paradigm. The literature on dehumanisation and technological performance is balanced only by the narratives on user context. The humanistic and technological paradigms are, as described throughout the literature, at opposite ends of the spectrum with a dualistic approach providing the 'middle ground' between the two opposing theories. Objectification, which can be further divided into five subsets, crosses many boundaries and interestingly is not always dehumanising. Finally, a dualistic approach, representing three distinct models, considers both technological and humanistic paradigms together and concludes with the theory of structuration.

References to Understanding Technology.

In order to summarise some of the key references from the literature, table 2.0 (overleaf) groups the references into broad categories identified as being essential to understand technology (Barnard and Gerber, 1999). Although useful in summarising and cross referencing the articles, table 2.0 only considers a few of the possible categories to which many more could be added. It does however demonstrate a good distribution of literature within each category, with the exception of the alteration of free will, giving some credible justification for the literature discussed. It is reasonable therefore to suggest that the aim to understand technology is, at least according to Barnard and Gerber (1999), complete.

Table 2.0

**Literature relating to the categories for understanding
technology (Barnard & Gerber, 1999)**

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Humanistic Interaction (Section II)

The unprecedented progress in medical imaging has led to an increasing dependence of the physician upon diagnostic technology (Attinger, 1984); in particular MR and CT may develop a culture of over-reliance on the imaging technology rather than human acumen (Postman, 1992; Reiser, 1978; Villeneuve et al, 1998). This is not necessarily always in the best interests of the patient, it has been recognised for some time (Culmer, 1995; Menninger, 1975) that a holistic approach involving treating the patient as a 'whole-person', by a human, rather than technological encounter, is the main criterion for quality patient care.

Modern imaging technology can, as discussed earlier, lead to objectification, isolation and reducing the patient to the mere physical; now represented as pixels of varying densities on a viewing monitor (Cussins, 1996; Simon, 1999; Sandelowski, 2000; Williams, 1997). In direct contrast to this, a humanistic approach views individuals as 'complex, physical, emotional, intellectual and spiritual wholes' (Seedhouse, 1986, p.51). With respect to ultrasound, the human image can be considered as both scientific and mythical, 'since its effect is both informative and affective' (Sekula in Sandelowski 1994, p.268). However, since Western medicine actively encourages a scientific approach (Seedhouse, 1986), increasing levels of high technology equipment may serve only to reduce the level of psychological care, a point that is, or should, be of concern to all (Benfield, 1979; Cockburn, 1985; Gibbs, 1997; Henderson, 1985).

According to Payne and Walker (1996) the most effective patient care in the clinical environment is achieved when there is knowledge of how individuals interact with one another. It is therefore appropriate, having described the literature of technology, to explore the research on the process of humanistic interaction.

The Radiology Interaction

An interaction occurs between individuals when they are in one another's continuous presence (Lupton, 1994, p. 26), and the study of any interaction should 'unlock new and enlightening aspects of human beings' (Charon, 2001, p.202). Within the radiology department there are multiple interactions between health care professionals of all levels and patients, but the nature of these encounters is generally ignored or dismissed as being trivial when compared to pure scientific research.

The most important intervention in reducing the level of patient anxiety during MR examinations is said to be that of the personal encounter between the patient and the radiographer (O'Connor and Cotter, 1998). However, much dissatisfaction with the effectiveness of social interactions between radiographers and patients has been expressed by several authors (Murray and Stanton, 1998; O'Connor and Cotter, 1998; Thorpe et al, 1990). According to Casselden (1988), the actual process of interacting with patients using both verbal and non-verbal communication, can induce stress in some diagnostic radiographers.

In addition, the skills required for effective communication within the profession are highlighted as being inadequate (Emrick, 1999; Murray and Stanton, 1998), possibly leading to poor levels of emotional support and patient isolation. The reasons for this are unclear, but it needs to be recognised that some patients are afraid of the machinery and technology and do therefore require additional reassurance (Cockburn, 1985; Mc Kenna Adler, 1995). Although the radiology encounter is usually of a short-term nature, the patient should always 'be introduced to [what may be] a very stressful and technological environment' (Bowman, 1993, p.17) in order to alleviate some of their potential fear.

The Role of the Radiographer

According to the functionalist theorist Talcott Parsons, medics act as the 'gatekeepers' governing access to the 'sick role' (a state of illness that is only approved by society provided that specific criteria are met) (Parsons in Clarke, 2001, p.9). The radiographer, in justifying the radiological procedure, (IR(ME)R, 2000) may also legitimise the sick role; with concrete evidence of the 'clinical problem' (Rhodes et al, 1999) in the form of a medical image. This means that the radiographer is in Parson's terms acting as a 'secondary gatekeeper' and thus establishes an immediate, powerful, impression in the patient's mind. Whether this possible subordination improves or diminishes radiographer-patient relationships has never been formally investigated.

There are two distinct types of images in the medical imaging encounter; the images of the patient displayed in some visible format, and the self-image of

the health care professional (Simon, 1999). The latter type of image is as important as the former in diagnostic imaging departments, since the institutions themselves are also recognised as bases of power, knowledge and control (Barley, 1986; Witz, 1992).

The power and control that radiographers may 'hold over patients' is partially legitimised since, in order to image the individual, the radiographer usually has to physically touch the patient to accurately identify the centring point. This fact is seen as a central feature of the social encounter, but surprisingly it is rarely mentioned in radiography (De Cann, 1988; Dowd, 1991). It is however given great importance within nursing literature, emphasising that such physical contact would not be permitted outside of the medical arena. The whole process does therefore carry a great deal of trust (James and Gabe, 1996). One way in which health care professionals learn to cope with these, often very personal, encounters is through the process of socialisation.

Socialisation in health care is not just 'learning how to do the job,' but 'learning how the job is done (and not done)' (Jones, 1994, p. 116). This is seen as crucial to behaviour (Moorhouse, 1992) since individuals are entrusted with an identity, and by 'wearing the uniform of office,' they should appropriate a corresponding behavioural programme (Perinbanayagan, in Cahill, 1986, p.303). Any disregard for this level of trust in radiography, brought about by any form of inappropriate professional behaviour, is regarded by Mead (1934) as a 'lack of completely developed [professional] self' (Meltzer, 1972, p.25). Only by having an effective role model, or as Mead

(1934) refers to them a 'significant other,' can complete professional socialisation be acquired. Furthermore, inappropriate behaviour may not be obvious (Goffman, 1959) or necessarily in breach of a code of conduct. It may be a covert, unintentional, or deliberate act.

The Art of Categorising

Research shows that hospital staff are guilty of labelling patients as 'problems' simply based on the nature of their illness (Simpson et al in Clarke, 2001) or failure to comply (Armitage in Clarke, 2001). Even age, gender, social class and ethnicity were also identified as factors in nursing studies. For instance, Jeffrey (1979) claimed to identify a classification of patients within Accident and Emergency nursing departments. 'Good patients' (who fitted into Parsons' sick role), were there for the right reasons, in contrast to 'rubbish patients,' who were seen as deviant and who were thought to break unwritten rules. This type of categorisation is, according to Clarke (2001), a common feature in medical encounters in a number of different clinical areas, although its existence in medical imaging has never been investigated.

Murcott (1981), in trying to defend the presence of such classifications, claims that the taxonomy of patients is understood against a background of getting through the day's work. Murcott goes on to say that these attitudes do not express bias or prejudice, however, this may not always be the case, and anecdotal evidence suggests that Jeffrey (1979) and Clarke (2001) are correct in their claims. The existence of categorisation within busy radiology departments, as has been shown in nursing, may well be an important

sociological factor (Blumer, 1969, Charon, 2001; Mead, 1934) if identified in the profession. It is suggested that a parochial knowledge of health research maybe responsible for some of these issues. Therefore without a broader understanding of disparate paradigms, in addition to the traditional scientific models, this situation is likely to remain unchanged.

Castle (1988), when considering the issues of the health-illness continuum (Figure 2.4) placed radiographers more towards the medical end of the spectrum than the holistic and social end.

Figure 2.4 Radiographers position along the health continuum

(Castle, 1988, p. 27)

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Explanation of Figure 2.4

Both the professional and individual characteristics of radiographers were positioned towards a more scientific understanding of health. It would be extremely valuable to the profession to see if the location of radiographers has

changed in the subsequent 14 years. In concluding, he felt that radiographers were unaware of the wider perspectives of health, which included self-identity, and without a firm idea of self that radiographers would struggle to become patient-centred (Shannon and O'Connor, 2000). Interestingly, Mc Connell (1998) only considered nurses to be at the midpoint of the continuum, and the majority, although there are exceptions, do not necessarily work within such technologically advanced areas as radiographers. Castle believed this led to 'radiographers as a whole tend[ing] to refer to patients by their component parts or in terms of the work done.' (Culmer, 1995, p.1).

This definition by component parts is also a form of categorisation (Clarke, 2001; Cahill, 1986) and medical reductionism (Barnard and Sandelowski, 2001; Emerson, 1979; Rhodes et al, 1999) in the radiology department. It is not dissimilar to that identified by Menninger (1975) almost 30 years ago; worryingly there is no evidence in the literature to suggest that this situation has altered in recent times. In fact, when considered in light of the fact that radiographers were seen to be at the wrong end of the technology–patient care continuum in section I, this suggests the need for an urgent shift of emphasis towards holistic patient care. If, as Dwane (1993) quite rightly advocates, patients' memories of the encounter should be more positive, only social scientific research will inform the profession if it is indeed at the wrong end of, at least these two, continua.

Although the role of the medical imaging team is typically portrayed as strictly biomedical and deterministic in construction in the majority of its peer-

reviewed journals, Simon (1999) believed that this was a contradiction, analogous to the issues related to technology in section I (Foucault, 1988; Postman, 1992; Purcell, 1994), since, just like technology, clinical skills and interaction cannot be differentiated from society and culture. The medical imaging encounter, viewed from the radiographer's perspective, is therefore similar to the patient experience of reality; that is, it is socially constructed. On that basis the role of the radiographer in the interaction also warrants rigorous, anthropological investigation (Barley, 1986; Dumit, 1995).

The Language of Radiography

It has been noted that the use of medical terminology immediately creates a 'competence gap' leading to an unbalancing of the relationship between professional and patient (Clarke, 2001, p.219). However, in addition, limited social science literature (Barley, 1986; Simon, 1999) suggests that a 'local language', not just medical terminology, may exist within radiology departments. This local language conveys meaning within the professional group, but simultaneously excludes other health care professionals and their client groups. This presumably develops a further bifurcation in understanding.

With respect to the human interaction with technology, Barley (1986) observed radiographers:

Insulting the machine in anthropomorphic terms whenever it or some feature of it appeared to fail or perform obstinately.

(Barley, 1986 in Simon, 1999, p.145).

This reinforces the proposition that social construction of understanding and meaning are sustained around technology (Bijker, 1987; Pinch and Bijker, 1984).

Further evidence of categorisation and the use of a selective language was identified in radiologists, they were found guilty of converting their image-viewing conferences, perceived to be sessions for intellectual and clinical knowledge by other professionals, into social and micro-political phenomena, where social events were discussed and 'patient identities as living social beings' were referred to in a disparaging manner (Simon, 1999). Anecdotal exposure to an eclectic social vocabulary such as 'shoot-throughs' and 'Townes', for types of projections, and 'T-bar' for a dedicated gonad shield, or 'slices' referring to the area under examination, in CT or MR are regular expressions within any radiology department, but have little or no significance elsewhere.

In the last decade there has been a move towards the study of narratives and in particular the metaphorical nature of language and meaning (Sandelowski, 1991). In order to begin to understand the phenomena of the interaction, which it is claimed is symbolic in nature (Blumer, 1969; Charon, 2001, Mead, 1934; Stryker, 1980), radiographers must be prepared to embrace 'alternative paradigms to disclose and elucidate the lived world' of all the individuals concerned (Sandelowski, 1991; Doering, 1992 in Leight, 2002, p.109). To illustrate this point Sandelowski, (1994) and Benyon, (2001) both draw attention to the aesthetic comparability of a radiograph or foetal sonogram, first

and foremost it is a scientific document, but also, more typically for the layman, it is a 'baby picture.'

Leight (2002), an American nursing lecturer, advocates that there are two different languages in modern health care. There is the common, traditional positivism; but this can be considered as almost 'symbiotic' with another 'type of language' which is phenomenological in nature and is constructed by stories of human agency. Not only do narratives and metaphorical analysis of communication enable professionals to further understand the 'reality' of health care, but they also develop a salubrious territory (Sandelowski, 1991; Holmes, 1992). Both 'types of language' consist of rules and vocabulary, a grammar (Cahill, 1986), and since the two are dependent on one another, but only one version (positivism) is dominant, the use of the term 'symbiotic' is considered appropriate.

However, Seedhouse (1986) expresses caution in the interpretation of actors' words and claims that they can be misleading. Some people will use their own words as a disguise or 'smokescreen,' he claims; some purely accidentally, but others intentionally, leading to deviant behaviour (Goffman, 1961).

Nevertheless this important element of human agency needs to be fully evaluated since:

In the technologically advanced world of today, perhaps aesthetic knowledge has taken on even greater meaning. Taking the time to hear and respond to our clients' stories takes on added significance in this age of health care delivery as a business.

(Leight, 2002, p.113)

Language and gender

Within any profession patriarchy is a complex phenomenon, possibly inherent within the institution, but it is most certainly symbolic in human interaction, since social interaction shapes identities (Blumer, 1969). In particular, verbal labelling has had a profound influence on definitions of 'self' (Cahill, 1986) with respect to gender.

Clarke (2001) believes that socially defined gender roles are brought about in the process of socialisation, where women have been denied the opportunity to develop their own 'self by definitions imposed on them by men' (Ferguson in Charon, 1980, p.221).

One of the ways in which language can become more meaningful and thus symbolic, is when the message arouses and has particular significance for both the recipient and the communicator (Mead, 1934).

Charon (2001) identified 'categorisation' as the main factor in symbolic language behaviour. Using language to categorise is essential because:

Language has to interpret the whole of our experience, reducing the indefinitely varied phenomena of the world around us, and also of the world inside us, the process of our own consciousness, to a manageable number of classes of phenomena: types of processes, events and actions, classes of objects, people and institutions, and the like.

(Halliday, 1978 in Charon, 2001, p. 65)

This enables individuals to make sense of the situation, an attribute not possessed by babies, animals or inanimate objects (Ibid). But names are not

just associated with individuals; they also incorporate expectations of a distinctive pattern of behaviour (Cahill, 1986). By naming and labelling:

Possible relationships between language practices and gender identity acquisition is focused on the use of identifying categorical terms in the course of everyday interactions.

(op.cit. p.297)

Having discussed the possible presence of categorical terms used to 'label' patients, it is equally important to identify other situations and relationships that may impact upon the radiology encounter. One such categorical term is the frequently heard practice of male physicians referring to female radiographers as 'the girls'. This deliberate expression then linguistically places the female in the powerless position of a child (Greaves, 1996). The intentional naming and categorising of individuals is a very powerful symbol of human interaction (Charon, 2001). This concurs with Ferguson in that the definition of 'self' is imposed on the individual. Further sociological research into the acquisition of gender identity in very young children provides substantive evidence to support this claim (Cahill, 1986; Denzin, 1971; Thompson, 1975).

Evidence that further reinforces theories of patriarchal dominance is perhaps unintentionally provided by patients, who often make the assumption that all male radiographers are doctors and all female radiographers are nurses (Cockburn, 1985; Witz, 1992). In addition, Shaw (1996) notes that patients will interact with female therapy radiographers about personal problems,

reserving queries about technology and management for the males. This however may be misrepresented and should perhaps be in the same categorical position as the doctor-nurse gendered identity above.

Radiography is however an unusual profession, since it requires a higher level of technological knowledge and skill than many other female occupations (Cockburn, 1985). In recognising this Diamond, (1998, p.88) observed that it is the only profession 'where females admit to knowing the reason for the constancy of Planck's constant.' This is seen as a compliment to the profession and goes some way towards disproving the myth that females are unsuited to technological work.

The traditional patriarchal assumptions of healthcare professionals are epitomised by Game and Pringle (1984), who stated that

Women who use technology are only 'lent it' by men but the parts they use are not powerful or new.

(Game and Pringle, in Shaw, 1996, p.2)

With males occupying the vast majority of consultant radiology and equipment engineering positions, the new and powerful parts of imaging technology appear to be still firmly under patriarchal control.

Supporting evidence for Game and Pringle's statement comes from sociological studies of inter-professional relations that demonstrate that the predominantly female nursing profession, which has, like radiography, been primarily female since the mid- 1920s (Witz, 1992) is subordinated to the male dominated medical profession (Stein, 1967; Wicks, 1998). The inferior status

of radiography may be further emphasised if, as in the case of nursing, the profession is focused upon creating a difference rather than competing for the 'same turf' (May and Fleming, 1997, p.1095). To merely support the work of radiologists reduces radiography to an adjunct 'concept of a profession' (Davies, 1995, p.61).

Examples of such behaviour are common, where the medic is guided to the appropriate action, without the nurse (Stein, 1967) or the radiographer (Barley, 1986) appearing to do so. Porter (1991) classified this type of behaviour as 'informal covert decision making' (Table 2.2). Although this indicates some degree of professional advancement, it is still a long way from a 'formal overt decision making' professional (Porter, 1991). This must represent concern for radiographers, since as mentioned previously, although in a different context, 'sites of difference are also sites of power' (Barrett, 1987, p.35).

A true humanist approach demands that individuals should be able to make their own judgements and have a high level of autonomy (Seedhouse, 1986) in an approved and visible manner. This may not be possible with radiographers if they are always considered subordinate in status to the largely male medical profession. The position is however changing in this respect and role-extension has recaptured a percentage of the radiologists' turf (Robinson, 1998).

However, some of the gender issues may be innate in the profession itself. Historically male radiographers have occupied more senior positions

(Cockburn, 1985; Witz, 1992). One study clearly showed that a higher number of male radiographers were promoted in a city teaching hospital that was linked directly to a medical school. This fact may, it is suggested, 'impart.. a more rigid patriarchal control' (Payne, 1998). Witz (1992, p.169) spoke of clear 'gendered strategies of internal demarcation' by male radiographers to make technical skills more associated with masculinity, while deliberately downgrading the value of patient care to such an extent that it was not until 1936 that the Society of Radiographers tried to address the issue. During the following few decades the pendulum swung the other way with males becoming the minority, due to a preference for female labour (Ibid), and the possible influence of early feminism; this was then a form of constructed gender equivalence.

However, Cockburn (1985) believed that this gendered dichotomy had returned; she reported that this tension between 'technology and caring' had resurfaced, now that male radiographers were once again a growing minority. A more recent study (Payne, 1998) for example, showed that male students placed more emphasis on the technological side of the profession. With information technology skills being widespread within radiography today, this point clearly needs further deliberation. Recruiting more males into radiography will not necessary resolve the gender issue since nursing studies have shown that the addition of male nurse managers only added to the existing burden from male doctors (Clarke, 2001). It was found that many of the 'undesirable attitudes' displayed by male doctors towards female nurses were replicated by males nurses when promoted into managerial positions. It

should be noted however, that female doctors within radiology are more common than in many other health care professions.

The patient experience

The justification for undertaking patient-centred research is that it responds to peoples' own perceptions and needs (Clarke, 2001). As seen in section I, in order to achieve 'True Presence' (Bernardo, 1998), it is essential that patients' thoughts and feelings are included in any account of a technological procedure; without it there may be a tendency towards reductionism and making assumptions on the patient's behalf.

All theories of illness should be developed from the patient's perspective not that of the health care provider (Morse and Johnson, 1991) since:

Qualitative data is based on the premise that gaining knowledge about humans is impossible without describing human experience as it is lived and as it is defined by the actors themselves.

Polit and Hungler (1991 p.497)

Accounts of patients' experiences during radiological examinations are surprisingly rare in the literature, with the exception of claustrophobia in MR scanners but, even then, the descriptions are mainly of a quantitative nature (Gray, 1999).

It is well documented that the confined space within an MR scanner, less than 75 mm from the patient's face (Flaherty and Hoskinson, 1989), presents problems and feelings of claustrophobia. In addition, it is acknowledged that the extreme noise of the gradient coils may also contribute towards patient

anxiety and can produce a degree of sensory deprivation (Shellock and Kanal, 1996). Statistics vary when attempting to quantify the extent of the problem, with up to 65% of patients reported as having either 'an acute or delayed dysphoric psychological reaction' (Spouse and Gedroyc, 2000 p.146).

O'Connor and Cotter (1998) believe that significant numbers of patients suffer from some form of anxiety when undergoing an MR examination, a claim that is difficult to substantiate either quantitatively or qualitatively. These authors, plus others (Thorpe et al, 1990), advocate that the focus should be placed on the interpersonal aspects, in order to reduce apprehension, since the level of anxiety has been monitored on MR patients and is said to be similar to that of patients prior to surgery (Mac Kenzie et al, 1995).

The problems were not just related to failed or terminated examinations, it was found that up to 13 % of patients moved during an MR study conducted by Dantendorfer et al (1997) and as a result, approximately half led to reduced image quality. The position of the patient in the scanner was also thought to be significant, together with the length of the procedure, the proximity of the receiver coil, and the opening of the scanner with respect to the patient position (Brennan et al, 1988). Koechling et al (1996) disputed these findings and considered sex and body weight to be the main factors. That is, heavily built males are more likely to experience problems with the scanner. Given the confined space within the bore of the magnet, this would be an expected finding. However, many of the subjects in this study (n=60), experienced distress from the noise, were less likely to have had an MR before, and had a

fear of being crushed or trapped. What did not seem to be significant factors influencing the success-rate were patient age or the type of scan, (position in the scanner).

It is by no means certain that patients will experience any problems when undergoing high technology imaging procedures; many enjoy the experience and are fully satisfied with every aspect, including the personal interaction with the radiographer (Murphy, 2001). To fully understand the nature of the encounter the comments of compliant, confident patients must also be considered since one of the dangers of qualitative research is to focus on the negative aspects to the detriment of the positive findings (Mc Dowell and MacLean, 1998).

Just why some patients can tolerate the same procedure to very different degrees is a key point in trying to understand the interaction. It may however be impossible to predict how a patient will react, since fear and anxiety may be evident on entering the waiting room (Brennan et al, 1988), or even for a few days prior to the procedure (Murphy, 2001). The concerns related to the technology may have already manifested themselves through external social interactions (O'Connor and Cotter, 1998; Thorpe et al, 1990). It is thought that the mass media in particular influences lay perceptions, which are constructed out of 'folk ideas and indigenous ... traditions' (Clarke, 2001, p.37). Koechling et al (1996), in what appears to be contradictory and confusing research, dismissed the social factors as influencing patient tolerance, but in their conclusion cited distress the night before, and other fears, to be predictors

of more stress inside the scanner. It should also be recognised however that perspectives may alter as a result of the actual encounter, making the experience better or worse than originally anticipated (Charon, 2001).

Other Imaging Modalities

Few studies (Thorpe et al, 1990) ever refer to other imaging modalities, apart from MR, that could equally present technological anxiety and fears. Nevertheless, Sandelowski (1994, p. 274) found some scant evidence in ultrasound, where one woman described her concern at having 'this machine pulled out on you'.

The experience of having a CT scan may not be too dissimilar to that of an MR, given the wider bore (op.cit.p.277) and perhaps less noise. The patient position inside the CT scanner for some extremity examinations is often uncomfortable and difficult to maintain, thus presenting the patient with further potential obstacles. Although interestingly, according to Emrick (1999), poor, or even non-existent, communication by radiographers, was the main problem cited in CT departments across the United States of America.

However, the confined bore of the magnet has remained the focus of attention, while other procedures within the radiology department have largely been ignored, or perhaps have been thought to present few problems to patients. Anecdotal evidence and simple observation may suggest otherwise, with imaging procedures such as Cardiology, Angiography, and Fluoroscopy still requiring the equipment to be in very close proximity to the patient. The

absence of research literature in these other modalities must be alarming to a profession that is technical in nature, but prides itself on holistic patient care (Murphy, 1999).

The undiluted accounts of Diamond (1998), whose literary skills inspired this research, seek to emphasise the graphic emotions encountered by a patient having a CT scan.

In addition to his technological concerns, he highlighted the potential gulf in perspectives between the radiographer and the patient during the imaging procedure:

*For 5 minutes read half an hour, lying stock-still with your head stuck in the machine's cavity: for non-invasive read a syringe full of gunk which heats up the bloodstream and leaves a nasty taste in the mouth. And for instant read when they've got someone round to interpret the results.
And for reassuring.. which all of this is meant to be.. imagine the hypochondriac claustrophobe lying with his head enclosed in white enamelled metal, seriously considering cancer for the first time.*

(Diamond, 1998 pp.24-5)

This demonstrates fear, concern, and a degree of mistrust, but above all else an enormous amount of empathy for other patients.

Recognising the patient's initial fears is essential for any health care professional but these expressions are not always apparent, with many individuals deliberately adopting a 'positive self-presentation strategy as a method of coping with their real feelings of self doubt, isolation and negative concepts' (Firth, 1991, p.33).

Patient coping strategies within the MR environment have been defined in the literature, and include the use of sedation (Spouse and Gedroyc, 2000), hypnosis (Simon, 1999) or the use of specific relaxation music (Carroll, 2001). However, the efficacy of these coping strategies appears to vary enormously with no one method ostensibly able to cover every situation.

Gendered Experiences

Whether the coping strategies of males differ in any way from females has never been formally investigated, although it was reported in one study (Murphy and Brunberg, 1997) that females were more likely to move during an MR scan, apparently this was because they asked for sedation more readily than males. There is increasing evidence that attitudes and beliefs related to health behaviour differ markedly between the sexes (Barton, 2000; Clarke, 2001). In addition, Western society appears to endorse a 'macho' stereotype of males as strong and self-sufficient (Robertson and Williams, 1998). Males may therefore feel obliged to meet these perceived expectations of society (Lloyd, 1998), which makes it more difficult for them to express feelings and emotion (Hobbs, 1995; Luck et al 2000). This may lead to 'self-regulated participation in social encounters' (Goffman in Cahill, 1986, p.296).

'To be masculine is not to be vulnerable' (Morris, 1991, p.93), and it is believed that males may develop deliberate avoidance tactics with health care professionals, while still convincing themselves they are healthy (Illich, 1976). Society regards men and women as 'more socially defined categories than biologically created ones' (Charon, 2001, p.222), and since individuals only

have a limited number of different 'faces' available to portray to society (Goffman, 1955, p.7), this would suggest that any biomedical approach to understanding patients would be wholly inadequate.

Stillion (1995) developed a multidimensional model of masculinity and highlighted developmental and social factors as being hugely important. This, he claims, produces behaviour such as denial and repression of emotions. If the male patient is in some way disturbed by the technological experience, they may hide their emotions because they are an expression of weakness. In a chapter related to men's reaction to illness (Stillion, 1995) a patient gave a full account of his experiences during a high technology procedure. This is one of only a few personal accounts (Diamond, 1998) connected with imaging technology found in the literature review. 'David' described his reaction during an imaging procedure to have his pacemaker renewed and how it brought out suppressed stories from his childhood.

I'm lying on my back, spread-eagled beneath the camera while it's sending images of my heart and pacing wire to the technicians at the back of the room. It's difficult to keep a whole sense of who I am in that tethered position. I feel like a trapped pig in a slaughterhouse....Conflicting voices from my childhood begin to wrangle inside me again. The grin and bear it voice is arguing for grim stoicism and heroic control as a real man. But my other voice—of a very frightened helpless boy— is trembling and shaky...twisted up, bullyboy faces from my secondary school are peering down at me. Fatty Rowe with a broken nose and vicious piggy eyes. Tubby Heath—oily, smirking, barbed.

(Jackson in Luck et al, 1997, p.77)

What is particularly interesting in this 'lived experience' is the loss of 'self,' the concept of 'self' is discussed in detail later. The graphic analogies used

together with the masculine undertones appeared to be the framework for a coping strategy that shows a degree of 'self-regulation' (Goffman, 1959).

However caution must be expressed when making generalisations across sexes since not all males/females will conform to the pattern of their own gender since through 'acting, communicating and role taking we are all capable of going' in different directions (Charon, 2001, p.224). For instance, it has been found that illness can be understood as a 'lack of strength,' by both males and females from a working class background (Cornwell in Clarke, 2001, p.36).

The reality of identity, who we are, is defined in interaction, and this, like all else, changes in the process of the encounter (Cahill, 1986). In this case it should be noted that there are two separate but simultaneous interactions: the interaction between the patient and radiographer, together with the interaction between the patient and the technology.

Self

The concept of self has been discussed extensively within philosophy and the social sciences, but its importance within human interaction related to health care and especially radiography is not readily acknowledged. Shannon and O'Connor (2000, p.167), (themselves radiographers) believed that in order to become patient-centred, an attribute that we should all aspire to, radiographers must first acquire a 'secure sense' of ourselves. It is claimed that if we do not understand our-selves, we may be ignorant of our patients' experiences (Morrison and Burnard, 1991).

The philosopher Buber (1958) referred to the 'I- Thou' relationship, where respecting the humanity of the other person is paramount, as opposed to the 'I –it' association that does not recognise the 'other' as a human being, but treats them as an object. The need to avoid objectification in all its forms has been shown to be significant when considering the interaction with technology (Cooper, 1993; Locsin, 1998; May and Fleming, 1997; Ozbolt, 1996; Purnell, 1998). All health professionals should therefore, aim to treat the patient as a human subject and not as an object of the procedure (Mc Kenna Adler, 1995; Spouse and Gedroyc, 2000) by adopting the 'I – Thou' stance. A further extension of this is provided by Mead (1934) who distinguishes between the 'I' and the 'me'. The 'I' he stated was, the part which reacts to the self by taking the point of others, while the 'me,' is the social part (Cahill, 1986).

An alternative definition of 'self 'is given where Laing (in Morrison and Burnard 1991, p.125), uses the terms 'inner self' and 'outer self'. The inner self is regarded as private and intimate as opposed to the outer self, which is a 'pretending self;' a false impression portrayed so that the self is seen in an approving manner by others. This manipulation of the projected self was also referred to as *tacit collision* by Goffman (1971), in his work on interactions within institutions. Applying this to the radiology encounter, the radiographer will present the outer self in order to foster a professional image, this, it is argued, would also help to legitimise their role (Dowd, 1991). Likewise the patient will wish to present themselves in a good light, even if this means concealing their true fears and anxieties (Mead, 1934; Goffman, 1971).

Charon (2001) believed that small children, in the role playing mode, take on the perspective of multiple personalities, allowing the child to reflect upon and construct their own self. Collectively the literature seems to identify self as a synergy of human thoughts and feelings, where changing from one role to another appears to be deliberate and seamless. For example in the hospital environment we may:

Become aware of the different roles we play when we put on a uniform and enter a ward setting. It is as though we leave a part of ourselves behind.

(Morrison and Burnard, 1991, p.126)

Self at any point in time is that particular moment's beliefs, values, and ideas that represent our position (Kelly in Morrison and Burnard). A point that was endorsed by Moorhouse (1992), who, like Morrison and Burnard (1991), considered the concept of self to change according to the environment. The self is being constantly redefined (Goffman, 1959).

The wearing of different 'goggles' is the useful metaphor employed (Kelly in Morrison and Burnard, 1991, p. 127), since goggles taint our perception of the world. These 'goggles,' according to one of the founders of interactionism, George Herbert Mead (1934) (although he does not use that metaphor) represent empirical reality; in this case the reality of the technological encounter for both the radiographer and the patient who are of course wearing different goggles.

Like the user-context concept, humans must make decisions about the significance technology has for them as individuals, since we see nothing 'in

the raw': nothing for humans ever speaks for itself (Charon, 2001 p.29). The importance of the symbol, whether the technological machinery or the significance of the self, which is also thought of as a symbol, formed the basis of the perspective in social psychology known as Symbolic Interactionism.

Symbolic Interactionism and Self

Symbolic Interactionism is a unique perspective within social science, it is steeped in a rich 'intellectual heritage' (Benzies and Allen, 2000 p.541), that seeks to explore and understand the 'event' of the social interaction, together with the social nature of human beings (Charon, 2001 p.202). Mead (1934) generated this social philosophy in his lectures and writing, and later Herbert Blumer (1969), a former student of Mead, developed these ideas further and 'coined the term' symbolic interactionism.

Symbolic interactionism differs from a macro sociological perspective, which considers the human in terms of structure or organisation and structure (Blumer, 1969). Humans are symbol users and can therefore only seek to interpret meaning when the actor's perspective becomes the focus of inquiry (Blumer, 1969; Burgess, 1984; Stryker, 1980).

This perspective emphasises the nature of the interaction demonstrating that humans 'act back and forth,' and are therefore not seen as passive determined organisms (Charon, 2001 p.24). It is, however, not just an interaction between individuals, but an interaction with one's self that constitutes the basic framework of this perspective (Becker and Mc Call, 1990). By using a system

of 'language and ideas, self is constantly' being modified as a person interacts with others (Brissett and Edgley, 1975, p56). Actors attribute meaning to their individual actions in addition to interpreting the actions of others (Clarke, 2001).

The self is the internal environment towards which we act; others label and define the self to the actor, and the actor in turn, redefines and portrays the outer self (Mead, 1934; Stryker, 1959). Mead in Charon (2001, p.73) placed enormous emphasis on the ability to 'get outside of one's self,' since it is through taking the role of the other that self can only develop. This was illustrated earlier with childhood play-acting (Cahill, 1986; Denzin, 1971; Thompson, 1975).

Since all situations can be described using this perspective, it is relevant to everything human. Therefore the study of the interactions that occur between radiographer, patient, other health professionals, and imaging technology should enable all concerned to develop a better understanding of self. Only by doing so can we understand each other, and begin to construct a conceptual theory of the reality of the interaction within a high technology setting.

Although mentioned mainly in the context of child development, Mead's reference to 'significant others' has far-reaching implications to all adults within society. Significant others take on importance with the individual, to whom there may be a desire to impress, respect and emulate. The significant other therefore becomes a role model (Blumer, 1969; Mead in Charon, 2001).

Role models are seen as highly influential in the types of behaviour expressed by individuals and in particular the socialisation of health professionals (Moorhouse, 1992).

Charon (2001) assumed that Mead incorporated all one's 'significant others' into one 'generalised other,' that is Society, but Mead himself did not make this distinction clear and several significant others are identified alongside the generalised other. Perhaps this is elucidated further by the German philosopher, Martin Heidegger's (1889 - 1976) *das Man*, a German term that has no true English translation, but resembles 'one', as in 'one shall do this.' Heidegger spoke of how people could console themselves at the death of one single individual by saying that 'well, *we all* have to go someday.' 'We all' is an exact interpretation of *Man*- it is everybody and thus nobody (Berger, 1969), just as the 'generalised other' is everybody but nobody significant.

Herbert Blumer (1969, p.181) in trying to convey Mead's original thoughts, considered 'self as a process not a structure,' representing a marked deviation from macro or structural sociological theories. Blumer felt that any situation in life involved some element of interaction, in addition to an interaction with each individual (self). All individuals have a self and a mind, symbols and perspectives; they therefore analyse problems, co-operate, communicate, and align acts. In contrast, macro sociological literature identifies self with structure and positivism; to do this, Blumer (1969) believes, misses the reflexive process.

Social Objects and Reality

Since humans see the world through perspectives, developed socially, reality is social and what we see out there (and within ourselves) is developed in interactions with others.

(Charon, 2001 p.42)

Like most social scientists, symbolic interactionists believe in the existence of an objective reality but they differ in their interpretation. Definition of this reality is highly influenced by social life and the important fact is that individuals do not respond directly (Ibid). Symbolic interactionists consider the social definition 'as it exists,' by defining what we see and creating a reality in interaction with ourselves; in this way we each create our own reality. This presumably makes any generalisations across populations a difficult, if not impossible, task. So there is a synthesis of three different versions of reality; the objective reality of the world, the social manipulation and definition of that reality, and finally our own unique interpretation of it.

To illustrate this Zborowski (1952) studied the pain threshold in different cultural groups. Since human pain is a physiological phenomenon, the pain threshold (objective reality) should be more or less the same in all groups. However, he discovered that pain acquired specific social and cultural significance (social or 'as it exists' reality) and finally he questioned individuals' own interpretation of what pain meant to them (internal or unique reality). He found a marked difference in pain threshold levels, but there was no reason to believe that some ethnic groups actually experienced more pain. The groups responded differently according to defined perspectives that individuals acquired from their reference group, these being composed of

generalised others and significant others (Mead, 1934). A similar logic might begin to explain why it is unclear that some males may appear to respond differently to females (Murphy and Brunberg, 1997) or why past experiences of others can be so influential on other group members. Understanding people in terms of their 'minded behaviour' is seen as a key component of symbolic interactionism (Benzies and Allen, 2001 p.543). In this perspective physical objects are also social objects, constantly changing as they are defined, and later redefined, within the process of the interaction. Blumer uses the simple example of a chair to support his argument:

Readiness to use a chair as something in which to sit gives the meaning of a chair; to one with no experience with the use of chairs the object would appear with a different meaning, such as a strange weapon

(1969 p.69)

To the patient, the physical object of the radiology scanner is not necessarily a sophisticated imaging device, but a social object with a different meaning; the construction of that meaning having been defined by social interaction. A chair may also be understood as something to stand on, or to store books on, just as a scanner may be a cancer machine, a tunnel, or a coffin (Murphy, 2001). Our understanding of an object is specifically related to user context (Barnard and Sandelowski, 2001; Blumer, 1969; Mead, 1934; Pinch and Bijker, 1984), since we define objects according to the line of action we are about to take towards them (Benzies and Allen, 2001; Charon, 2001).

It is however not just physical items that are classified as social objects (Clarke, 2001). When referring to illness, many individuals do not react to the symptoms of their illness, but the meaning attributed to the symptom. Since

certain illnesses can carry specific meaning, the individual may respond accordingly, irrespective of the actual symptoms. Clarke clarifies the importance of this by showing that the meaning is not invented by the person, but socially constructed in everyday life. People also define other persons as important in situations and attach meaning and significance to them as individuals. Equally, we define who we are (self) in a social manner, using symbols to communicate both to others and ourselves.

Social objects are however only referred to as 'symbols,' within this perspective, if they are used in communication and representation (Charon, 2001; Blumer, 1969). Symbols are social, in as much as they are defined in interaction, not established in nature (Charon, 2001). Shibutani (1961 p.121) defined a symbol within symbolic interactionism as 'any object, mode of conduct, or word towards which [people] act...whatever the symbol stands for constitutes its meaning.' Figure 2.5 (overleaf) demonstrates the relationship between social interaction, objects, symbols, perspectives and self.

Figure 2.5 Self and Interaction
Charon (2001) p.91

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Explanation of Figure 2.5

Charon illustrated that all social objects are derived from the social interaction. The nature of these social objects are seen to be varied and often unique. In this case the focus is on the whole environment, consisting of the physical scanner, the conduct of staff and patients, the means of communicating, plus anything else that may express meaning or representation. By using the imaging technology it becomes a social object that has specific meaning, although it may have a different representation within the user context. Figure 2.5 illustrates the process and range of social objects that then ultimately

contributes towards the construction of the social reality of the radiology department.

It is assumed that any form of communication is a symbol if it is used intentionally (Charon, 2001). Mead (1934, p.149) however, attached greater significance to symbols and did not agree that 'any form of communication' would be symbolic, he insisted that the symbol must 'arouse in one's self what it arouses in the other' individual. This may be achieved by naming objects and people using human language to give the object or person significant meaning or categorisation. It appears that the object may sometimes come before the person, and therefore take on greater value, in order of importance. As Moorhouse (1992) pointed out for example, the level of expertise is automatically attributed towards health care professionals' uniforms as symbols and not, in the first instance, to the actual person. The use of a military analogy where uniform, rank, and serial number are considered before the individual's personal characteristics is also recognised by Lupton (1994).

To summarise Symbolic Interactionism, three basic assumptions form the framework of this social philosophy:

1. People do not respond directly to things but attach meaning to the things and act on the basis of the meaning that it has for them e.g. (Zborowski, 1952).
2. Meaning arises in the process of interaction among individuals or 'as it exists.' Individuals are able to act because they have agreed on the meaning attached to things in their environment.

3. Meanings are assigned and modified through an interpretative process that is ever- changing, subject to redefinition, relocation and realignments (Benzies and Allen, 2001)

Defining Symbolic Interactionism within the Radiology Context

Since Blumer (1969) felt that any situation in life involved some element of interaction, the study of the encounters that occur in the radiology department is considered to be most appropriate. Analysing communication with this sociological perspective would seek to understand the interaction between radiographers, patients and imaging technology.

Radiographers, like all humans, use symbols to communicate either verbally or non-verbally. For example: communication with patients is normally comprised of written and verbal instructions related to the imaging procedure. However, there are other, more covert symbols that are also used on a frequent basis. A radiographer welcoming a patient with a smiling face may convey empathy and caring to the patient. Conversely, a frown may be interpreted as demonstrating an unpleasant or an uncaring attitude from the patient's perspective.

Regardless of what symbol is used, it must arouse the same meaning in the patient as it does in the radiographer in order to be truly symbolic. This is the essential criterion of symbolic interactionism (Mead, 1934). The analysis of the various methods used to communicate will be useful to both radiographic theory and clinical practice.

Radiographers' emotions and feelings will inevitably alter during the course of their daily duties. If, due to the pressures of work, the smile becomes a frown then the message the patient receives is also altered. This also shows that radiographers 'act back and forth' within 'self,' and that they are not passive determined organisms. Research in radiography has clearly shown the importance of understanding 'self' in the interaction with patients (Shannon and O'Connor, 2000).

The meaning of the symbols is therefore generated during the examination, or 'as it exists'. It is this understanding, at the time of the scan, that represents the unique reality of the imaging procedure.

The other element of symbolic interactionism theory is the significance of the social object. In this case, the main social object is the imaging scanner.

Whether this has a different meaning for radiographers has never been investigated. Is the scanner just understood as a machine that keeps them in employment, or is it viewed as a complex scientific piece of technology?

As mentioned previously, to the patient the same object may represent cancer, an object to be feared or even perhaps curiosity. Since both radiographers and patients create their own reality and meaning through social interaction, the symbolic significance of the scanner may lead to opposing realities. Their respective definitions are not established in nature, but rather are socially constructed.

In conclusion, symbols represent reality within the radiology department, form our social existence and are critically important to all concerned. Any findings that are considered to be symbolically significant, within the context of the radiology department, will be deliberated towards the end of this study. The entire philosophy is in itself neatly categorised in Figure 2.6.

Explanation of Figure 2.6

Moving from the point of interaction at the top of the page, symbols, language and perspective are seen to be critical factors. Human reality is the action towards social and cultural symbols, as opposed to human society, which is responsible for symbolic communication. An important point of note is that socialisation, a process that is critical to the development of all health care professionals, is also regarded as symbolic in nature. The range of symbols employed during communication such as naming and categorising are primarily functions of language and show individual expression within the active person.

Figure 2.6 The Symbolic nature of human beings
Charon (2001), p.70

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Critics of Symbolic Interactionism

Symbolic Interactionism has a very unusual history since it was not until 1937, when Blumer (1969) compiled the teaching and lecture notes of George Herbert Mead, (1934) that interpretation and written explanations of this philosophy existed. Scholars have been particularly critical of the theoretical and substantive elements of Symbolic Interactionism, indicating that it is unclear in techniques and procedures for the further development of research (Kuhn, 1964). Also the research methods employed by interactionists do not follow the objective, scientific enquiry utilised by other investigators. However, in their defence, Blumer and others were quite adamant that it was not a method but a philosophical approach towards empirical science. The micro-sociological situation, according to Clarke (2001 p.15), 'grossly underestimates or fails to acknowledge the impact of structural forces on behaviour.' Although the focus is intentionally upon the person as a character, there is almost an obsession with the individual and deviant subcultures to the detriment of other factors (Jones, 1994). While this point is certainly the case with Goffman (1957, 1959) it is not evident in the true Symbolic Interactionist literature.

In addition, emotional and unconscious components of human behaviour were given little attention (Melter et al in Benzies and Allen, 2001), although more recent research has tried to address this (Fine, 1993). It could be argued however, that the need to emphasise psychology within the approach may only serve to reduce the process of social interaction and possibly miss the 'power of the symbol' within human behaviour. Diluting the true symbolic philosophy

would lead to a cause and effect approach, rather than one that is developed during the interaction, where the symbol is the catalyst for understanding and meaning.

Radiography is not a pure science or a social science; it is, rather, a mixture of both. If a holistic approach is advocated (Culmer, 1995) to enhance understanding of human behaviour, it is my contention that research perspectives should incorporate all relevant domains including Symbolic Interactionism. As a single theoretical perspective it cannot seek to provide the knowledge base of the profession but it can, however, enlighten and produce original thought and insight (Charon, 2001). The use of Symbolic Interactionism as a perspective in the analysis of data is discussed in the methodology chapter.

Taking the role of the other

To take the role of the 'other', in a covert manner, is to take the perspective of the 'other' and is central in all institutions (Mead, 1934). The process enhances understanding but critically, it can also be used to exploit others (Charon, 2001, Goffman, 1959).

Reflecting on who we are in terms of self image replaces the 'goggles' (Kelly, in Morrison and Burnard, 1991) with a metaphorical 'looking-glass' (Cooley, 1970). This reflects back what we believe 'others have towards us'; in other words, interaction is determined by respective perceptions of the reflected self, i.e. the way people believe others perceive them at any particular time

(Moorhouse, 1992, p.7). It is therefore reasonable to assume that the manner in which radiographers and patients interact depends upon their self-image, as suggested by Simon (1999) together with the influence of significant others.

The position for the patient is however different from that of the radiographer since the patient's interpretation of the situation is largely controlled by others. Erving Goffman (1959) described such environments as total institutions, 'where for a length of time the individual's life is in an enclosed, regimented space' (Charon, 2001, p.199). Hospitalisation and scanning procedures in particular, may well fit into this description.

It is interesting to note that many of Goffman's studies were centred around mental institutions and there have been few attempts since to explore parallel situations within general hospitals (Holmes, 1992). Any form of hospitalisation or illness, whether brief or long term, can lead to the identity of the patient being challenged (Clarke, 2001; Lupton, 1994) and the individual has to come to redefine self. There may be a loss of privacy brought about by stripping outward signs of individuality, often revealing fragile bodies (Davies, 1995). To compound the problem, personal items such as clothes and dentures are removed, this is similar to naturalisation within objectification, discussed earlier, and may reduce self-body image (Price, 1993; Rice, 1981). The body wearing the x-ray gown is probably symbolic in itself; often the National Health Service (NHS) Trust Logo is emblazoned across it. This may be identified as naming and categorising the patient with a written label, rather than a verbal expression

The patient is no longer identified as an autonomous individual, but as some form of 'hospital property.' This, together with the powerful respect given to the uniform of the health care professional (Lupton, 1994; Moorhouse, 1992) may place the patient in a subordinate position even before the interaction occurs. Caution should be applied when attempting to consider the emotions of a hospitalised patient since it should be recognised that most people are anxious within the hospital environment. They have been referred for a clinical investigation and often are unwell (Lupton, 1994).

Institutionalisation

A passive patient response to the interaction may be the easiest option, although it is being increasingly recognised that the concept of the submissive patient is disappearing (Clarke, 2001). Lying inside a complex, confined scanner may, or may not, present the patient with worries, but the immediate environment meets two criteria defined by Charon (2001) necessary for institutionalisation to occur. There should be isolation from significant others, outside the establishment at that moment in time, and secondly there should be total control of the environment by a few powerful individuals (radiographers). The assumption that radiographers are considered to be powerful individuals is made on two accounts, firstly they may be considered as 'secondary gatekeepers' who can give credence to the sick role (Parsons, 1952). Secondly, in the *Birth of the Clinic* (1973), Foucault recognised that advancing medical practice placed more power with health professionals, and since medical imaging is one of the most technologically advanced departments, in addition to being the major consumer of hospital budgets, it is reasonable to assume that

the 'powerbase' has also increased. Foucault uses the term 'clinical gaze,' and although radiology is not mentioned specially, modern imaging technology has considerably enhanced the clinicians' ability to 'gaze inside,' or image the patient. Following on from this, Lupton (1994) developed the idea of clinical images replacing patient reality.

The Social Ritual of Radiography

Social life, even in its quiet mundane moments, is 'characteristically pregnant with social drama' (Turner, 1982, p.11). Individuals come to situations; define them, and then (and only then) act in them (Brissett and Edgley, 1975). Roles and rituals in radiology are common and sometimes mundane in their execution, but they are nevertheless critical to our understanding of the whole imaging experience. Radiographers' routine enactments may conform to Goffman's definition (1959, p.27) and, 'involve one or more different parts ...that may be presented by the performer on a series of occasions to the same kind of audience' (the audience in this case being the patients).

Although Kant (1724 - 1804) argued that the data of experience are formless, the German social thinker Wilhelm Dilthey (1833-1911) strongly disagreed, claiming that almost any routine (in everyday social life) has relationship concepts that could be utilised in order to improve understanding of the process. The anthropology of performance reveals 'what is normally sealed up, inaccessible to everyday observation and reasoning' (Dilthey in Turner, 1982, p.13). Dilthey himself uses the term '*Ausdrucken*' meaning literally 'to press or squeeze out'.

It is possible to identify scripts, roles and ceremonies within the metaphorical stage of the clinical setting (Holmes, 1992). Working on the premise of Jacques in Shakespeare's *As You Like It* (Act II, scene 7) that 'all the world is a stage, and men and women merely players; they have their exits and entrances; and one man in his time plays many parts' (cited in Tanner and Timmons, 2000, p.976) places the concept of using theoretical metaphors to understand social reality into perspective. Ritual and social drama are richly 'textured' by individuals and the way they interact (Turner, 1982).

Bourdieu (1977) considers rituals and myths to be critical, defining ritual as the 'act' and 'myth' as the belief which makes the action necessary. 'Myths' can convey particular meaning to patients, which ultimately can be a factor in their level of compliance for an investigation (Murphy, 2001). By definition ritual is associated with acting on belief and emotion and not necessarily knowledge (Strange, 2002), and for that reason many studies have condemned the study of rituals in the health care professions.

Benton and Avery (1993, p.13) were characteristic of this, they claimed that 'if ritualised behaviour was to be replaced by research-based practice everyone would be a winner.' However, Schon (in Strange, 2002) had already made the point that many critics fail to address, that is that since feelings and emotions cannot be quantified in the conventional scientific paradigm, behaviour and ritual are frequently ignored in main-stream science.

Some confusion is apparent when trying to clarify what a ritual actually is; coping strategies against anxiety that have meaning (Chapman, 1983); or gestures and body movements, again that convey meaning (Strange, 2002). The word itself conjures up a picture of a religious ceremony, but that is a misleading impression since many behaviours become ritualised without their participants knowing (Tanner and Timmons, 2000). In anthropology, ritual is a means of contact with cultural values and beliefs, providing a rich source of data in order to understand a group's 'world view.'(Strange, 2002). It is therefore important that rituals are considered independently of roles in a humanistic study. Any ritual is therefore symbolic if it conveys meaning in its execution (Blumer, 1969; Mead, 1934). Strauss (1978, 1982) spoke of a 'Negotiated – order theory' within roles (who does what and in what order?); this derives directly from Symbolic Interactionism and takes as its point of departure everyday life and its events (Barley, 1986).

Menzies (1970) found that nursing rituals protected staff from anxieties exacerbated by the interaction with human suffering. A similar justification for rituals is seen in *Awareness of Dying*, (Glaser and Strauss, 1965), where the various levels of awareness (closed, suspicious, and open) were implemented within a particular ritual for the purpose of avoiding disruption of the 'sentimental order of the ward staff' (Glaser and Strauss, 1965 in Chapman, 1983). However, Chapman disputed this last point, preferring to explain the social interaction in terms of the social and psychological impact on the individual's own world rather than the structure of the hospital ward. This would be a more comfortable fit with the underlying theories of self

Performing patients

Patients in the radiology department have to conform to rigid rules and routines, especially with regard to preparation and positioning, which force them to redefine their 'self' and make sense of the immediate environment. As mentioned previously, the patient's body may become objectified and subjected to total control. Once inside a scanner there is little scope for movement or individual expression. This feeling of institutionalisation (Goffman, 1959) should not be underestimated since:

One's own clothes are replaced by an anonymous white gown, one's wrist is clasped by an identification bracelet with a number. One becomes subject to institutional rules and regulations. One is no longer a free agent; one no longer has rights; one is no longer in the world-at-large. It is strictly analogous to becoming a prisoner, and humiliatingly reminiscent of one's first day at school. One is no longer a person- one is now an inmate.

(Sacks, 1984 cited in Lupton, 1994, p.97)

This description illustrates a profound identity and self crisis. In addition it is interesting that in this case thoughts return to bad experiences of school days, just as 'David,' the patient did in Luck et al 1997, when describing cardiac catheterisation (see page 69).

Schmid and Jones (1991, p.417) found that real inmates within the total institution of a prison developed temporary identities as an 'anticipatory survival strategy.' This is seen as an inauthentic presentation of self (Glaser and Strauss, 1967) and although it is more graphically evident within the confines of a prison, impression management is not exclusive to this environment. We all have experience of presenting a 'front' to others (Schmid and Jones, 1991) or wearing the different 'masks' available to us.

For the medical imaging scenario, perhaps Goffman's use of the phrase 'self-regulated participation' is more appropriate since the department could not be considered as a totally closed institution.

Feelings of helplessness and loss of dignity (Gray, 1999) are well documented, but psychological effects of sensory deprivation and time perception have also been reported in hospital patients (Rees et al, 2000).

In radiology examinations patients are expected to perform what appears, to the health professional, to be relatively simple roles, such as complying with instructions and maybe suspending respiration for short periods. For some there maybe almost a resignation of the social 'self' and a survival or coping strategy prevails. This will be difficult to identify since a performer is able to conceal activities or facts which are 'incompatible with the idealised version' of themselves (Goffman, 1959, p.56).

Diamond (1998) when referring to his MR scan hints at hiding his personal self in order to cope with a stressful experience, he comments:

Had you told me a month earlier that I would spend 15 minutes a day constrained, I'd have told you about my small claustrophobia problem – but even claustrophobia becomes routine

Diamond (1998, p.106)

The Medical Performance

Gammarnikow's pioneering study (1978) of the relations between doctors, nurses and patients demonstrated repeatedly that the roles were likened to that of father, mother and child in that order. This shows a leitmotif of hierarchical control and role differentiation.

Stein (1967) identified a 'game-like' quality between nurses and doctors where the 'game' took a sophisticated ritual of verbal and non verbal communication. Some of the observations made by Barley (1986) in his longitudinal study of radiology departments conformed to a roles and ritual pattern. Like all other humans, when interacting with patients, radiographers appear to 'act out' the socialised roles and rituals and redefine 'self', this is not just a subconscious decision, rather it is sophisticated impression management that camouflages vulnerability (Chapman, 1983; Goffman, 1959; Menzies, 1970). Table 2.1 provides a synopsis of significant literature demonstrating the social drama of the healthcare professional.

Table 2.1 Literature of Social Drama in Healthcare Professionals

Authors	Significance
Stein, 1967; Porter, 1991; Barley, 1986	Identified various levels of 'game like' behaviour which reduced over time as medical staff became less dominant.
Tanner and Timmons, 2000; Goffman, 1959; Charon; 2001	Behaviours in healthcare become ritualised without the participants knowing. Performance teams exist that portray the dramaturgical concepts.
Bourdier, 1997; Strange, 2002; Chapman, 1983	All rituals and myths are critical to everything we attempt to understand.
Holmes, 1992; Moorhouse, 1992	Identified definite roles and ceremonies within the metaphorical stage of the clinical setting.
Lupton, 1994; Foucault, 1973; Parsons, 1952; Morrison and Burnard, 1991	Patients are subordinate to powerful healthcare workers, especially in the high technology environment. Professionals perform different roles with redefined 'selves'. The uniform is seen to be symbolic.
Mead, 1934; Goffman, 1959	Taking the role of the other is central in all institutions. The type of institutions (open /closed) plays a part in the social interaction.

A participant observation study of the roles of medical and nursing staff was performed by Porter (1991) in order to try and identify particular patterns of interaction. A review of the literature revealed four broad types of power relations. In the absence of any substantive research in this area the researcher considered it useful to compare the radiography literature against Porter's model of interaction. Table 2.2 illustrates this comparison in the literature. The radiography publications indicate a steady progression through each category over time, and this is particularly evident within Barley's longitudinal study. It should be noted however, that Porter felt that the fourth stage had yet to be attained, although it must be appreciated that the research is now a little dated and society in general has changed considerably. This is probably still true in radiography, although the implementation of consultant grade in the new four-tier structure (SCoR, 2002) will, it is hoped, ultimately move the profession into the fourth type of formal overt decision-making.

Table 2.2 Four Types of Nurse – Doctor Interaction

<p>(Source Porter,1991)</p> <p>1.Unproblematic subordination. Nurses have no involvement in the decision making process, they obediently follow doctors' instructions and do not question decisions.</p>	<p>Corresponding radiography literature</p> <p>Witz,(1992) In 1938 radiographers were more like radiologists' secretaries or wives.</p> <p>Cockburn (1985, p.116) Radiographers had no choice other than to follow the doctors orders.</p> <p>Howell (1995) Radiographers' roles were clearly subordinate to medical staff.</p> <p>Kevles (1997, p. 59) Doctors actively campaigned to keep radiographers subordinate.</p>
<p>2. Informal covert decision making There is a pretence of unproblematic subordination, nurses obey the 'doctor-nurse game'. They do however make suggestions without appearing to do so.</p>	<p>Prime et al (1999, p.64) Radiographers offer an opinion on a radiograph without the radiologists' knowledge before it is reported.</p> <p>Barley (1986, p.90) By anticipatory questions the radiographers maintained the veneer of deference that typified interaction in the x-ray area.</p>
<p>3. Informal overt decision making. Nurses are assertive and freely express their views. The rules of the doctor – nurse game do not apply.</p>	<p>Parlarm et al (2001, p.51) Radiographer participation in previously restricted employment practice is now widespread.</p> <p>Barley (1986, p.91) The radiologist became less involved in routine decisions and the radiographers replaced some of their duties.</p>
<p>4. Formal overt decision making. Nursing decisions are officially sanctioned. Each patient has a nursing care plan based on detailed information about diagnosis and treatment.</p>	<p>SCoR (1997) Reporting by radiographers is not an option for the future, it is a requirement.</p> <p>SCoR (2002) Consultant grade radiographers are a reality.</p>

Dramaturgy

The use of theatrical concepts in order to elucidate the social world is known as Dramaturgy. It is the study of meaningful behaviour (Brissett and Edgley, 1975) and is seen as a powerful instrument and a valuable adjunct to the construction of a social reality 'imbued with vitality and wisdom' (Massey, 1990). The initial theory is attributed to the Social Psychologist, Kenneth Burke (1937, 1945, 1950) but given enhanced application and understanding in the work of Erving Goffman (1959, 1961, 1967). Burke asks the question: 'What is involved, when we say what people are doing and why they are doing it?' (in Frankenberg, 1986, p.611). The answer to this impossible question is: Act, Scene, Agent, Agency, and Purpose. Since it is the theories of actions, and not of knowledge that are most appropriate, then drama can be considered to be a form of ritual.

Stone (in Brissett and Edgley, 1975) re-visited the original concept of 'self' from a dramaturgical perspective, this correlates well with Morrison and Burnard (1991, p.126). Two types of 'self' were offered, identification *of*, and identification *with*. Only when identification *of* (due to appearance-in this case uniform) has occurred can identification *with* then take place, thus supporting the argument that patients identify with health-professionals in the first instance, and the individual second. Equally, it could be argued that the same is true with radiographers seeing the 'category of patient,' not the person.

Through micro-sociological analysis and by focussing on the meaning of mundane interaction, a dramaturgical approach will *Ausdrucken* (squeeze out)

understanding, and become liberating to patient and healthcare professional (Holmes, 1992). Brissett and Edgley (1975) also reinforced the point that it is descriptive understanding, not explanation, that is the focus of this analysis.

Space Analysis

The process of establishing social identity is linked to what Goffman referred to as the 'front regions and the 'back regions', by analogy with frontstage and backstage in the theatre (Tanner and Timmons, 2000). The front stage is described as: a regular and fixed part of an individuals' performance. It is the proper setting where the actor must fulfil the 'duties' of their social role and communicate the activities and characteristics of the role to other people in a consistent manner' (Barnhart, 2000, p.1-2). Backstage may be defined as a place 'relative to a given performance, where the impression fostered by the performance is knowingly contradicted as a matter of course' (Goffman, 1969, p.120).

The audience should be convinced by the actor demonstrating behaviour expected of that role. Goffman (1959) studied life in a hotel on the Shetland Islands. Here he noticed the kitchen staff and waiters behaved very differently in the dining room (with guests present) than they did in the kitchen (no guests present). One example cited was the presentation of used drinking glasses to guests with etiquette (frontstage), knowing that in the kitchen (backstage) the glasses were just wiped and not washed.

While in the backstage workers, can relax and do not have to conform to expected frontstage rules (Tanner and Timmons, 2000): it is therefore an area where the impression fostered by the performance is intentionally contradicted (Cahill in Charon, 2001). A distinctive feature is the restrictive access of the audience to the 'backstage,' although literature speaks of a barrier in terms of audience perceptions, very often a physical barrier is evident. Goffman (1959) characterises what he calls the 'language of backstage' behaviour such as reciprocal first naming, profanity, shouting, humming and whistling. This is arguably, a more truthful type of performance.

It would seem apparent that any area where patients and visitors are present, such as wards, clinics (Tanner and Timmons, 2000) and presumably x-ray rooms would be frontstage. By the same token staffrooms and radiology console rooms would be backstage. Interestingly, although Goffman (1959) also mentioned a third area, which he termed 'outside of the stage,' (an area from which there is an inability to gain access to the performance of the team) this does not appear in any of the medical or nursing literature and is therefore difficult to locate in a clinical area. As well as individual performers, Goffman (1959) also considered the team to illustrate the pattern of behaviour of a group of individuals. The team attempt to achieve common goals. In order to utilise dramaturgy analysis to enlighten (Holmes, 1992) the profession, it is essential to critically analyse previous dramaturgical studies, especially those in health care.

Erving Goffman (1922 – 1982)

No account of social interaction, presentation of self, or dramaturgical analysis would be complete without significant reference to, and credit given to Erving Goffman. Before his unexpected death in 1982, Goffman made a significant contribution towards Symbolic Interactionism and social drama philosophy. His work has had an impact upon cultural anthropology and psychology in addition to many other influential sociologists and a limited number of nursing studies (Cahill, 1986; Holmes, 1992; Moorhouse, 1992). His obituary notice paid tribute to Goffman's theories by declaring to the public at large that 'routine social actions, such as gestures and grunts indicate that people naturally strive to formulate identities' (New York Times, November 22nd 1982).

Goffman attended the world famous University of Chicago as a graduate in the 1940s. He was still influenced by George Herbert Mead (1863 – 1931) and Charles Cooley (1922) in particular and his doctorate studies were guided by Herbert Blumer.

Goffman was, in the traditional sense, a symbolic interactionist, although interestingly he repeatedly refuted that particular label (Goffman, 1988). In addition, as mentioned previously, his theories moved away from the idea of shared meaning which is a key component of Symbolic Interactionism. He did however still have some 'common – ground' with other interactionists such as Burke, Mead, Cooley, and Blumer by insisting that the mechanistic models of

human behaviour were inadequate since they eschewed any notion that humans act with purpose and meaning (Young, 1999).

The notion that society could be studied as a type of drama began to penetrate the peripheral fields within sociology and psychology (Young, 1999). Like many other interactionists, Goffman placed considerable significance on 'self,' accordingly he stated that the 'self' is 'something of collaborative manufacture' (1959, p.253). By this he meant that 'self' cannot not only exist in different forms, but it is 'produced anew' on each and every occasion of social interaction (Cahill, 1986, p.188).

Dramaturgical Studies

Goffman observed a variety of social interactions in *Presentation of Self in Everyday Life* (1959), as part of his doctoral thesis, he observed life in a small community in the Shetland Isles using the theatrical stage as a metaphor to explain how people could 'stage manage' behaviour. This book also considered clergymen, dentists, and, some medics amongst others to graphically illustrate how people used 'fixed props' and job situations to act out roles and rituals, both as individuals and teams. In addition, Goffman clearly broke with the tradition of Symbolic Interactionism by describing how people could adopt their roles leading to deviant behaviour. Although this particular text was written well before the technological revolution in medical imaging, Burke does refer to the deviant use of high technology equipment, in

what he terms 'rhetoric of medicine,' Burke continues:

Whatever it is as apparatus, it also appeals as imagery; and if a man has been treated to a fulsome series of tappings, scrutinizings, and listenings, with the aid of various scopes, metres, and gauges, he may feel content to have participated as a patient in such historic action, though absolutely no material thing has been done for him, whereas he might count himself cheated if he were given a real cure, but without the pageantry.

in Goffman (1959, p.163)

This is in total synchronisation with the epistemically disciplined subject (Cussins, 1996) and the need for patients to legitimise their condition by objectification, discussed in depth in section I (pages 22-29).

Asylums (1961) is an analysis of total institutions, looking at mental hospitals and prisons in particular. There are however some very useful parallels with identity, deviant behaviour, and 'role distance' that may be incorporated into this study. Goffman's (1967) *On Face-Work*, looked at how individuals present a 'face' or may lose 'face' in an encounter. He made a clear distinction between the different types of 'face' employed within symbolic interaction. One of his most inspirational texts, *Behaviour in Public Places* (1963) is a framework that looked at neglected areas of 'face to face reality' in public and semi public places. As a result of this, Emerson produced *Behaviour in Private Places: Sustaining Definitions of Reality in Gynecological examinations* (1979). The emphasis here being upon social interactions between doctors, patients, and the ultrasound examination. Many of the findings from this study were discussed in section I, although arguably, the value of this study is diluted by the absence of any significant dramaturgical scrutiny.

Very few medical or nursing studies have provided a 'true' dramaturgical analysis of the social interaction. The area of investigation has tended to focus on theatre, not the metaphorical theatre in this case, but the hospital operating theatre (Holmes, 1992; Tanner and Timmons, 2000; Mc Garvey et al, 2000).

Holmes considered it to be a very exciting and novel approach to the study of nursing. Although acknowledged, he does avoid many of the criticisms levelled at Goffman, especially with regard to the cynical view of relationships. Holmes concluded his thoughts by stating that dramaturgical analysis provides fresh insight into practice and relationships.

Tanner and Timmons (2000) concentrated on space analysis which produced some interesting, if somewhat controversial, findings. Finally, Mc Garvey et al, (2000) looked at role definition against the background of managerial, technological, and structural control and were critical of historical legacy that supports peri-operative nursing roles. Although all three studies took a slightly different approach to the use of dramaturgical analysis, collectively they provide a paradigm that is 'concerned with the potentiality as well as the actuality of life' (Holmes, 1992, p.947): significantly they all indicated the importance of a critical dramaturgical approach, rather than a descriptive one, as part of their respective conclusions, but critical reflection and recommendations were rarely mentioned in the articles themselves.

Other Dramaturgical Studies

Due to the lack of dramaturgical studies in the health care arena, a broader reading of other, not immediately relevant, papers was undertaken to reveal any possible parallels.

Subject areas as diverse as, *Bachelorhood and Marriage* (Darling, 1976), *Identity in a Maximum Security Prison* (Schmid and Jones, 1991) and *On Being in Insane Places* (Rosenhan, 1973) made fascinating reading but the links with radiography were tenuous at best.

However, Fred Davis (1959) wrote a paper entitled: *The Cabdriver and his Fare: Facets of a Fleeting Relationship*.

It has been a concern of Bowman (1993) that radiographers also have a 'fleeting relationship' with patients; in fact Reeves (1999) goes further in describing radiographers as 'hit and run carers,' for the same reason. Although radiographers' don't, as would be expected, fit into Davis's description of cabdrivers daily routines, the situation is not too dissimilar in the following respect:

The ...day consists of a long series of brief contacts with unrelated persons of whom he has no foreknowledge, just as they [passengers or patients] have none of him, and whom he is not likely to encounter again.

Davis in Brissett and Edgley, 1975, p.143

It is appreciated that radiographers may know some patients who will have been scanned before, and may return, but generally the statement could be applied to the role of the radiographer.

The patient will have been referred for a radiological examination by a 'named physician,' to whom they will return for the results. From this perspective the production of the image is seen as 'a means to an end,' like the identity of the cabdriver, the individuals in the white uniform are, as Goffman categories them, "non – persons."

Just as the identity and 'self' of the person who takes a passenger from point A to point B is unimportant since arriving safely and within a time frame is the only real aim (Davis, 1959), getting a clear diagnosis in a safe environment is the important factor for the patient, and not the identity and 'self' of the radiographer.

This might suggest that there is an additional reason for Moorhouse (1992) and Lupton (1994) suggesting that it was out of respect for the power and authority of the uniform that patients respond to the dress-code first and the person second; perhaps the patients also have an ulterior agenda? Whether patients view the radiographer in these terms, especially since the concept of the submissive patient is disappearing (Clarke, 2001), is not known. Some may wish to engage the radiographer in a 'deeper social interaction,' which would eradicate any notion of 'non-persons,' but perhaps radiographers feel this is unnecessary or impracticable in a busy department. Although it is accepted that there are occasions when such deeper interactions will occur. Equally, it could be viewed as erosion of the 'power that legitimises their role' (Jones, 1994), and is not socialised behaviour (Cahill, 1986) that would sustain their professional image (Morrison and Burnard, 1991; Simon, 1999).

Impression Management

The way people act and dress for a job interview is very different to that of the actions and dress code for a party. This is one simple observation made by Goffman to explain self and identity, since it is through our appearance and manner (personal front) that we manage others impressions of us. Goffman (1959, p.24) pertinently described the activity of influencing others as a 'performance,' his classic *Presentation of Self in Everyday Life* is contextually saturated with examples of performance behaviour.

Performance Teams

In addition to individual performance there are also members of groups or organisations all cooperating in order to present the correct image of the institution. Goffman called these 'performance teams.' Charon (2001) cites, as a good example, the calm confidence (front) of airline staff in an emergency. The radiology team would also easily fit this description; they often rehearse their lines in the absence (backstage) of the audience and assist each other in the performance (examination) when the audience (patient) is present. The loyalty of each team member is paramount to the successful image of the team and one person alone can give away the 'secrets' of the team. This presentation of front is better known by Goffman as impression management and it is evident in every element of society.

Human beings act on a stage; they perform for others; They impress and they are impressed. They are both actors and audiences. And they often form a cooperative performance team that works to present a united front to others. We know we do this; others know we do; we know that others know we do this; life is drama, and to understand interaction, self, or society we must consider this fact.

(Goffman, 1959, p.9)

The fact that 'we know' what drama we are performing may suggest that the role is not intentional, Goffman considered this fact to be worthy of a different term.

Role Distance

Role distance is a situation when an individual is consciously 'playing with a role,' they have knowingly established an 'inner-distance' between themselves and the role playing (Brissett and Edgley, 1975, p.13). This establishes a role that may be void of meaning and with concealed purpose. According to Goffman they have now two choices; to change the direction in which the encounter is developing, or to cease playing the role altogether. There are numerous examples of this type of ulterior conduct, leading to what many authors have labelled 'deviant' behaviour. Mental patients using the official message centre, 'to work the system' and set up a betting syndicate (Brissett and Edgley, 1975) being just one. Goffman was, and still is heavily criticised for this cynical approach, that many believe undermines professional groups and personal integrity. However, Berger in Brissett and Edgley (1975, p.13) considered this 'ingenuity of humans... to circumvent the... system [as] a refreshing antidote to sociological depression.' If social reality is dramatically created, it will probably also be dramatically malleable (Goffman, 1959). This dramatic model is then contrary to any rigid deterministic sociological theories

As a sociologist of human interaction Goffman relied more on observation than scientific methodology. He was once described in *The Times Literary Supplement* as a :

Public private eye...forever on the lookout for candid camera evidence that might lead to divorce proceedings between ourselves and our social images.

(Harris, December 18, 1981)

Like stage actors, social actors enact roles, assume characters, and play through scenes when engaged in interaction with one another. Both require the necessary props, dialect, and costumes to produce a 'shared experience and sense of reality' (Cahill in Charon, 2001).

The early works of Goffman (1959,1961) were especially helpful in formalising the dramaturgical model for American sociology, but critically so, since the perspective demonstrated that humans often separated their subjective intention from their objective behaviours, that is to say, they gave off impressions far different from those they had in mind (Young, 1999). Performers may therefore exploit the use of drama for their own purposes; Goffman (1981) illustrates this by referring to the strained grunts often expressed for the benefit of the audience as 'response cries.' These deliberate enactments are intended to focus the attention of the audience onto the actor.

Theoretical Crossroads

Dramaturgy and Symbolic Interaction are seen to bifurcate at the concept of shared reality. One of the key tenets of Symbolic Interactionism is that, by communicating, people attempt to share symbolic reality; Goffman however believes that people 'foster' the impression that they wish others to see and not necessarily the one they have in mind, leading to deviant types of behaviour. This would mean that doctors, patients and radiographers all live in their 'own private worlds of meaning while trying to give off the dramaturgical impression of mutuality in purpose' (Young, 1999, p.11).

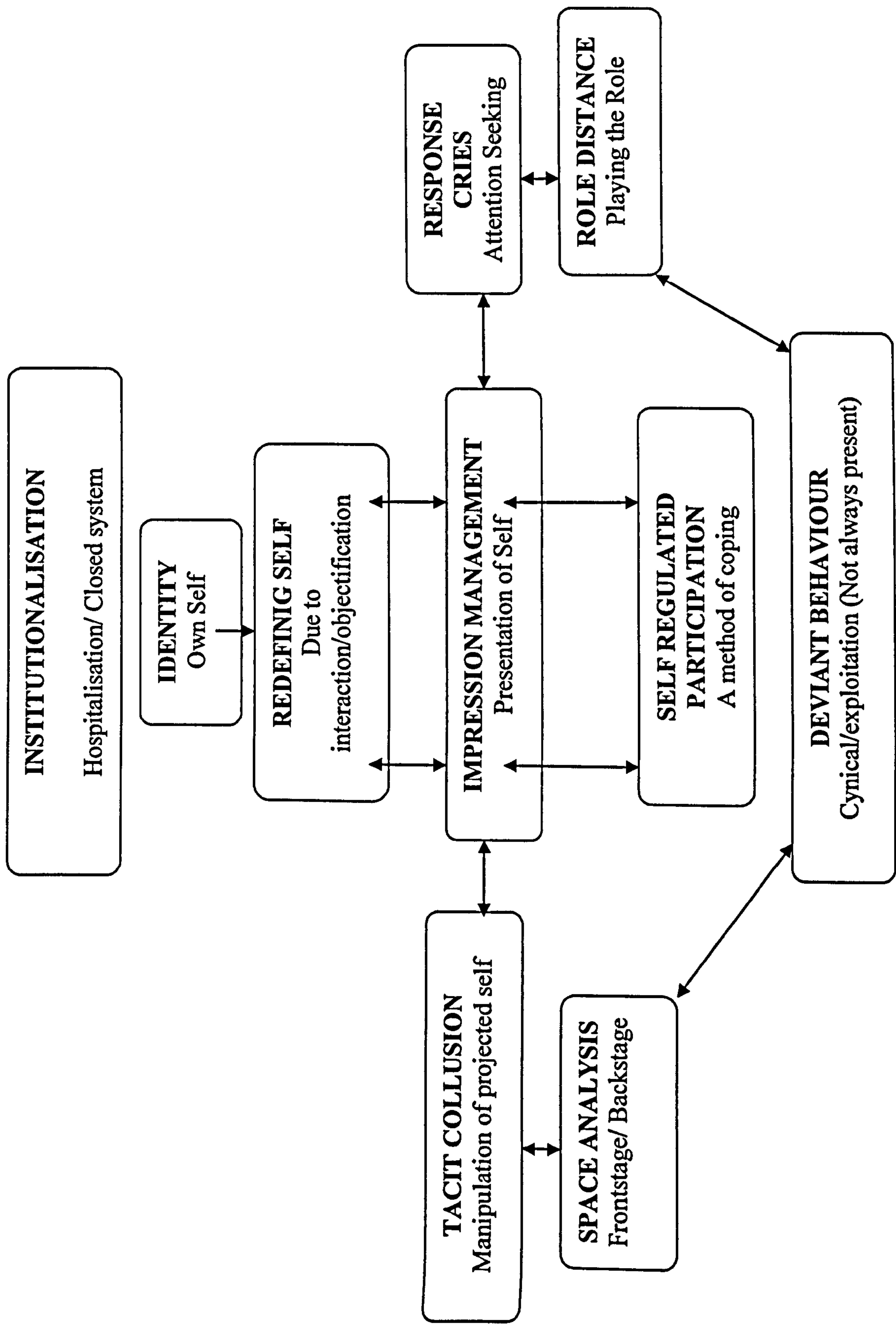
The suggestion that shared meaning, trust and belief maybe in jeopardy amongst health care professionals is an assault on the basic foundations of patient care, indeed economics, politics and bureaucracy (not to mention the influence of gender, race, and authoritarian domination) have all had significant impacts to change individuals and society. As Young (1999, p.11) puts it: 'there are no significant others in the supermarkets of life.' It would appear therefore that not only does dramaturgy have humanistic and emancipatory dimensions, it also has repressive elements.

Initially, in the era of scientific research, dramaturgy was seen as a welcome humanistic alternative since it used a lively and comprehensible language. This was also in contrast with the 'opaque, dry language' of Talcott Parsons (1952), that is a structural or functional approach. However, Social Psychologists in the 1950s and 1960s viewed dramaturgical analyses as a 'fraud and perverse distortion of social reality' (Young, 1999). But by the

middle of the 1980s, 'dramaturgy has been established as an important theoretical framework in mainstream social inquiry' (op.cit.p.12) and yet little critical dramaturgical analysis within the hospital environment has been attempted.

In concluding the work on dramaturgy and Erving Goffman it is a useful reminder to summarise the main concepts of this perspective. Any attempt to rationalise the philosophical theorist is going to prove to be a difficult task. The individual concepts are all interrelated and brought about by, and produced 'a new' (Goffman, 1959), in each and every interaction.

Figure 2.7 Dramaturgical Concepts of Erving Goffman (1922 – 1982)



Explanation of Figure 2.7

From the literature discussed, a template of dramaturgical concepts (Figure 2.7) has been assembled and provides an overview of the perspective. It illustrates that once within the institution; identity can be altered resulting in a redefining of self. This is brought about by impression management which is underpinned with coping strategies. Finally, during the performance additional types of behaviour also emerge, such as response cries and space analysis, which can ultimately lead to deviant behaviour. In addition it is intended that this model, developed solely from texts reviewed, will be re-evaluated and redefined on the basis of the data from this research study; it is therefore only a provisional guide.

Dramaturgical Concepts of Erving Goffman (1922 – 1982), illustrates the perspective from the closed institution of the hospital, where the ‘self’ is redefined in the interaction. The process is then very much one of action and immediate reflection, or as Charon (2001) puts it ‘acting back and forth.’ The actual presentation of self can develop in different directions, as indicated by the double headed arrows, often in several directions during the one social encounter. For instance, if the ‘response cries’ are not successful in gaining attention, then the ‘self’ is redefined through impression management and perhaps another strategy pursued. Most actions are seen as self-regulated participation and deviant behaviour is not always present, although there are many exceptions (Goffman, 1959, 1961, 1969).

Defining Dramaturgy within the Radiological Context

Although radiographers may not consciously think about their roles as being part of a performance, each radiological investigation can be considered to have an act, scene, and agency. When each imaging procedure is considered to be a well-rehearsed series of actions and instructions carried out within a specific time frame, the parallels with a 'drama' start to become more apparent.

Dramaturgy, within this study, is therefore the study of the performance of radiographers, patients and the imaging technology during a CT or MR scan. It is the analysis of roles, rituals and the intention behind the actions.

If, as suggested, the outer self is the pretending self (Morrison and Burnard, 1991) then radiographers and patients 'act out' their roles during the imaging procedure. This assumption has never been investigated in radiography research. Although symbols are still the main method of communication, dramaturgy takes a different view with respect to the true intention behind the symbol. Shared meaning, is therefore rejected by this theory, unlike Symbolic Interactionism (Goffman, 1959).

An example of this for the radiographer would be as follows:

Communicating with the patient in the scan room (front stage) in a professional manner and then going into the control room and speaking about the patient in disparaging terms. This would probably be using the language of back stage referred to earlier (Goffman, 1959).

It is however not just an individual performance, since working closely with our colleagues, the imaging team try to present the most appropriate image of the department and indeed the profession. As part of this role radiographers are expected to perform the rituals of the team and to deviate from these could reveal the 'dark secrets' (Charon, 2001).

For example: Being knowledgeable of the patient's condition but pretending not to know or informing the patient that the scanner is operating correctly when the radiographers all know there are problems that may delay the examination. These are both forms of deviant behaviour, which may be hidden by the sophisticated performance of the imaging team.

Dramaturgical behaviour from the patient would take on a different emphasis as the following example indicates:

A patient lies in the scanner portraying a calm, relaxed self, but in reality they are very anxious. They do not wish to 'lose face' so they adapt their performance accordingly. This is what Goffman (1959) called impression management, that is, it is the pretending outer self, rather than the real inner self, that is presented to the radiographer.

Each specific component of dramaturgy, identified within this study, will be related to the radiological context within Figure 7.11.

Summary of chapter

This chapter has investigated two apparently conflicting paradigms of biomedical science (hard technology) against human social science (soft technology).

Section I defined the concept of 'technology' and several different versions demonstrated that technology is a truly multifaceted perspective (Barnard, 1999; Caralee et al, 1999; Locsin, 2001; Orlikowski, 1992; Sandelowski, 2000). The focus of the profession appears to be centred on hard technology with little or no research into social scientific aspects. Failure to recognise soft technology can reduce the radiographer's role to the mindless application of medical science, delivered on orders from physicians (Sandelowski, 2001). Imaging technology then becomes driven by 'demand pull' (medics and patients) and 'technology push' (equipment manufacturers) (Freeman, 1987; Robertson, 1998).

Three models of technology (Orlikowski, 1992, Figure 2.1, 2.2, 2.3) guided the discussion through the technological literature, derived mainly, although not exclusively, from nursing theory.

Objectification was a hugely significant dehumanising factor during high technology procedures (Cooper, 1993; Locsin, 1998; May and Fleming, 1997; Ozbolt, 1996; Purnell, 1998). Several types of objectification were recognised including legitimisation by objectification (Rhodes et al, 1999) which was later connected with what Goffman (1959) referred to as the 'rhetoric of medicine.'

Cussins (1996) derived the term 'ontological choreography' in order to express the role of health care professionals who are maintaining referential supremacy. This was considered to be a critical factor, since it enabled the actor to control and direct the nature of the interaction from within the reality of the medical examination.

A rapidly progressing technologically deterministic society (Timmermans, 1998) may, it was claimed several times, be guilty of sacrificing human care to efficiency and perceived professionalism. This only serves to create differences, a paradigm of control, (Hawthorne and Yurkovich, 1995) and as Barrett (1987, p.35) clearly spelt out; 'sites of differences are also sites of power.'

Other technological studies in health care (Cooper, 1993; Laing, 1982; Mc Connell, 1998) revealed the dilemmas of technology and the need for a consequential paradigm shift. Barley's (1986, 1990) longitudinal studies of CT departments uncovered some very interesting anthropological findings associated with medical imaging staff and the use of imaging technology. Towards the end of section I it was becoming apparent that, although research within the profession has been almost exclusively scientific, social science must be inherent within any attempt to understand the use of imaging technology. The point was made later in the chapter that radiography is not a pure science or a social science, it is rather, a combination of both.

The concept of 'user context' was introduced into the argument by Barnard and Sandelowski (2001), this provides a degree of symmetry to the humanistic side of the conceptual model (Figure 2.3) and again shows that both hard and soft technology must not be considered as distinct entities (Locsin, 2001; Sandelowski, 2000).

Section II considered in some depth the human interaction related to social scientific theories. It was very concerning to find that some radiographers' abilities to communicate and interact with patients were considered inadequate (Murray and Stanton, 1998, Emrick, 1999). Many authors (Barley, 1986, 1990; Simon, 1999; Witz, 1992) identified two distinct types of 'images' in the radiology department; the physical image of the patient and the professional's image of 'self.' This latter type of image has led to a power differential with the patient, or a 'competency gap,' as Clarke (2001) describes it. Whether this may be a contributory factor, in that radiographers are cited at the wrong end of the technological–humanistic dualism (Castle, 1988; Figure 2.4), is unknown.

Nursing studies (Jeffrey, 1979; Leight, 2002 amongst others) noted that staff labelled patients into specific categories, where language and actions were symbolic in that they had shared meaning, but also sometimes these activities could be deliberately misleading (Seedhouse, 1986). This was the first suggestion of a type of deviant behaviour that is explored further in the works of Erving Goffman (1922 – 1982).

The influence of gender within the profession was found to be historically profound, with female radiographers being subordinate in status to the medical staff (Cockburn, 1985; Witz, 1992), although further and more recent research, suggests that this is changing.

When comparing radiography literature against Porter's (1991) model of interaction (Table 2.2) it is apparent that more formal overt roles such as advanced practitioner and consultants are emerging in both professions. It is also acknowledged, that although both professions have yet to attain complete autonomy in status, they do aspire to it.

The patient experience is given full consideration as would be expected in a study of this nature (Bernardo, 1998). Even though there are few patient narratives in the field of radiography, those that are selected graphically demonstrate the extent of the problem (Brennan et al, 1988; Diamond, 1998; Murphy, 2001). The significance of gendered experiences are also investigated in the literature (Luck et al, 2000).

Self is seen to be a central feature in the process of communication and interaction and if, as suggested earlier, communication may be poor in some radiographers, then it is worthy of inspection. The examination of 'self' requires analytical perspectives for understanding reality and it was at this point that symbolic interaction was introduced.

The genesis of this perspective is revealed (Blumer, 1969; Charon, 2001; Mead, 1934), with the main tenets being discussed (Figure 2.6), along with the need to employ this under-utilised social scientific perspective in health care research. Social drama, roles and identity are all seen to be part of this micro-sociological perspective and are evident in limited health care literature (Table 2.1).

Attention is then turned to the ideas of Erving Goffman (Figure 2.7) who expanded upon the social drama and symbolic interactionism still further. The useful metaphorical 'theatre' provides unique elucidation of the social world (Brissett and Edgley, 1975). Goffman firmly rejected the notion that he was a symbolic interactionist by discarding the idea of a shared meaning; turning instead to ulterior motives in the 'presentation of self' and minded behaviour (Goffman, 1959; 1961; 1967).

The use of these perspectives, which have evolved through close attention to the literature, will assist in the development of a conceptual model of the technological radiology encounter. It is therefore appropriate that the last words of the literature review go to Cahill (1986) who sums up these humanistic perspectives by stating that:

Regardless of whether one fully accepts Goffman's views [and Symbolic Interactionism], it is virtually impossible to look at the world or oneself the same after reading his insightful analyses of social life.

(in Charon, 2001, p.200)

CHAPTER 3

METHODOLOGY

Overview of chapter

The goal of all health care research is to establish knowledge, some new and some innovative, by building on, or even refuting previous findings. Whatever the case, the researcher must be confident that the outcome will be relevant to policy-makers and practitioners (Murphy et al, 1998, p.iii). With this point firmly in mind the aims of this inductive thesis were stated as:

1. *To develop a conceptual model of the human interactions with medical imaging technology.*
2. *To generate a unique theory of the modern radiological encounter.*

It was argued in chapter 2 that any attempt to understand human 'reality' using a traditional positivist approach would fail to reveal the 'meaning' from the perspective of all participants, Therefore, it has been concluded that alternative post-positivist paradigms are more appropriate.

This chapter will provide a detailed account of post-positivist methodologies. Nevertheless the value of positivistic methodologies cannot just be dismissed (Grbich, 1999; Denzin and Lincoln, 1998); not least because they are the most frequently used and are predominately experimental paradigms. Positivist researchers have produced knowledge and understanding of the physical world which has been extraordinary (e.g Lee, 1998). In addition it has to be recognised at the outset that there may be no single

correct perspective. Health care is such a complex phenomenon that 'broad theoretical perspective[s] [are] clearly called for' (Clarke, 2001, p.26).

Following an introduction to research terms and design, the chapter is divided into six sections: the first section investigates the notion of scientific research and the paradigmatic assumptions which guide it. The second section focuses on the post-positivist paradigms with particular emphasis on justifying the methodology. This section also considers radiography research and the methodological approaches that currently influence the profession. Section three discusses the issues of rigour in qualitative research and how the credibility of this study is transparent through the audit trail. The fourth section addresses the difficulties in developing the research tool of semi-structured interviews. Sampling strategies are outlined in the fifth subdivision and this raises consideration for ethics and data handling. To conclude the chapter, the focus switches to data analysis and considers coding, concept and model generation from the data. In addition, creativity in qualitative research (Hunter et al, 2002) is discussed, where the argument continues from the literature for adoption of the historically based and alternative research perspectives of Symbolic Interaction and Critical Dramaturgy.

Research Terms

It appears to be common practice for some research terms to be used interchangeably in order to express a common meaning. For example, *The Collins English Dictionary* suggests that models, concepts, and theories are all ideas (HarperCollins, 2001). Whilst this is factually correct, there is a difference, but the dictionary and some research authors (Greenhalgh and Taylor, 1997; Jones, 1994) fail to make the important distinctions

between the terms. Thus before the research design is discussed, it is vital to be clear about the descriptive terms used in the methodology. Silverman (2001) provides this clarification in conjunction with Figure 3.0 overleaf.

Models:

It is suggested that models roughly correspond to paradigms (Guba and Lincoln, 1994), thus models will identify the ontological and epistemological factors within an overall framework. In this study a model will be derived, in line with the aims, following the analysis of the data. Although Silverman (2001) specifically uses Symbolic Interactionism as an example of a model, it should be remembered that Symbolic Interactionism is not a paradigm, but rather a perspective (Charon, 2001; Mead, 1934). It is therefore more correct to consider conceptual models as both paradigms and perspectives, in this way original thought and insight can be displayed in such conceptual models.

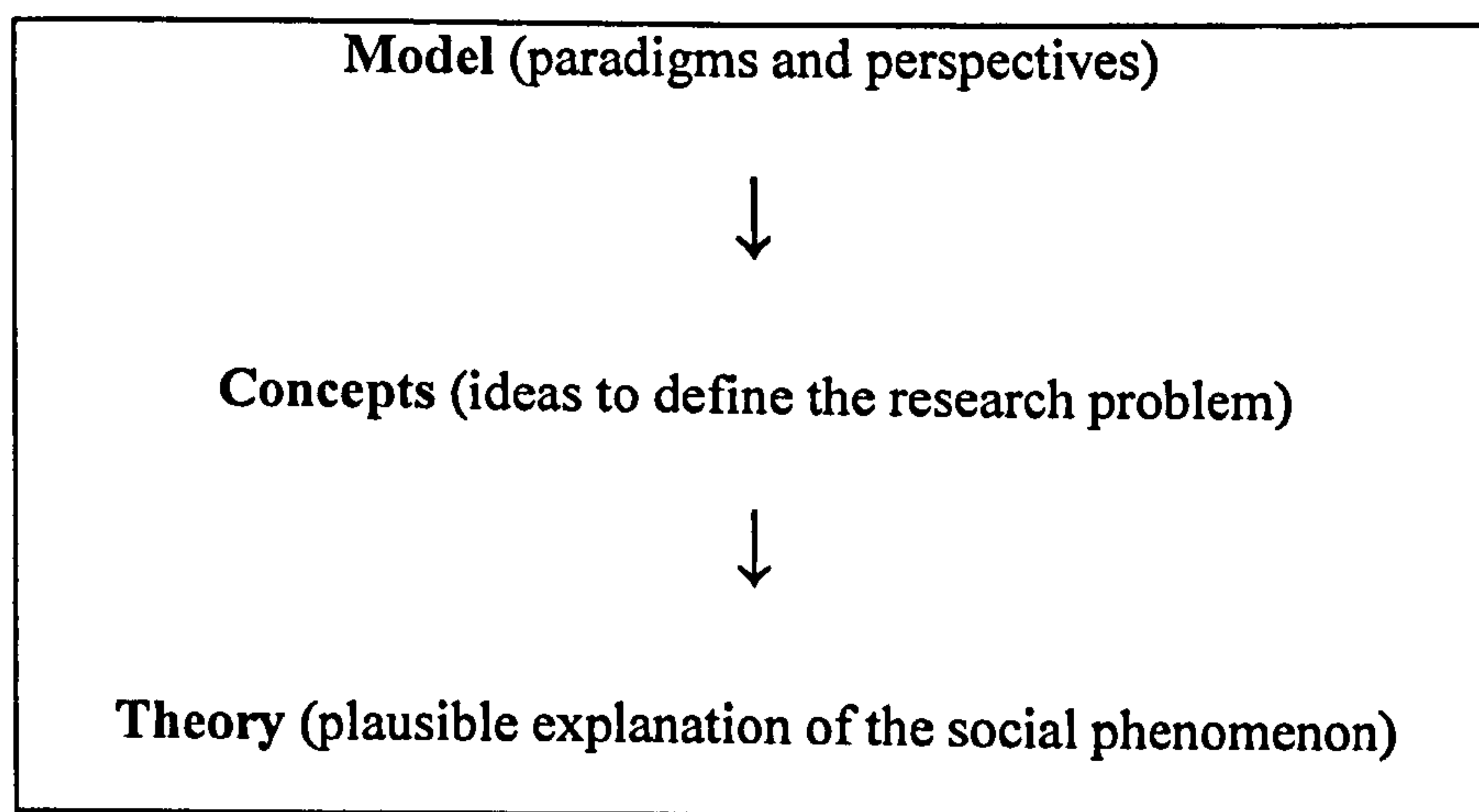
Concept:

Concepts are said to be ideas deriving from a model that provide ways of viewing the world, they are vital in defining a research problem (Silverman, 2001). For example, in this study, Figure 2.2 (*model of technology-triggered structural change, Orlikowski, 1992*) showed the need for radiographers to be questioned about their career pathways and how they may have been influenced by technology over time. Therefore this concept was then incorporated as an interview question.

Theory:

Theories are defined as a collection of concepts arranged in order to explain a phenomenon (Strauss and Corbin, 1994). 'In a sense, without a theory there is nothing to research' (Silverman, 2001, p.3). Once concepts have been derived from the data, the task of theory- building in the radiological encounter will commence. The chronological order of these terms in the research design is summarised in Figure 3.0 below.

Figure 3.0 The Sequencing of Research Terms (Silverman, 2001)



Research design

Qualitative research is not the faithful following of steps gleaned from a qualitative textbook. It is a particular worldview attached to a particular theoretical approach to reporting and interpreting reality.

(Morse, 2002, p.3)

It is from this starting point that the design of a purely inductive study commenced. Following an inductive, as opposed to deductive approach, meant that themes, categories, and ideas developed as the study progressed (Denzin and Lincoln, 1998) and there was

no predetermined hypothesis to test. The study design was not fully developed at the start of the project but came about as the product of the processes described. As Stern has commented, this 'makes the system so difficult to describe' (Stern, 1980, p.21) since the dynamic nature of the design is continually influenced by the development of theory. Data were collected between September 1999 and June 2002.

The design evolved over three distinct but interrelated stages; initial interviews of patients commenced with few preconceived ideas and inevitable researcher bias as a radiographer practitioner. In addition, the researcher's background brought theoretical sensitivity to the natural setting which might have limited or directed data interpretation (Streubert and Carpenter, 1999), and this possibility is discussed further in subsequent chapters. Following ethical approval, a theoretical sample of patient interviews, all semi-structured, were audio-tape recorded and transcripts made verbatim. The interview questions were then redefined by immersion in the initial literature review and the preliminary transcripts. This redefining is explained further as the study evolved. All redefined interviews were identified with '2' attached to the code.

Transcripts of such recordings, based on standardised conventions, provide an excellent record of 'naturally occurring' interaction.

(Silverman, 2001, p.13)

Data collection occurred at two sites (a District General hospital in North Wales and a university teaching hospital in North West England). Both had busy radiology departments with static CT and MR suites. It is essential to study behavioural phenomena at a local level on a small scale in preference to large scale societal levels (Hammersley, 1989).

To ensure total anonymity the hospital departments were not coded or indexed as such, but in order to differentiate between the two a letter 'A' was assigned to interviews undertaken at the university teaching hospital. To explain the indexing system further, Figure 3.1 outlines the process and is self explanatory.

Figure 3.1 The Indexing System

MR denotes an interview with a patient immediately after a Magnetic Resonance scan.

CT denotes an interview on a patient immediately after a Computerised Tomography scan.

MALE denotes a male patient, while FEM denotes a female patient.

'A' signifies that the location of the interview was in the university hospital.

'2' signifies that the patient interviews were redefined, not initial interviews.

Radiographer interviews were differentiated by Rad and Radexp, and numbered sequentially, the latter corresponding to the radiographers interviewed on the telephone about their experiences.

For example:

MRFEM3: Third interview, initial, of a female patient following an MR scan undertaken at the District General hospital.

CTMALE10(2A): Tenth interview, redefined, of a male patient following a CT scan undertaken at the university hospital.

RADEXP2: Second radiographer telephone interview.

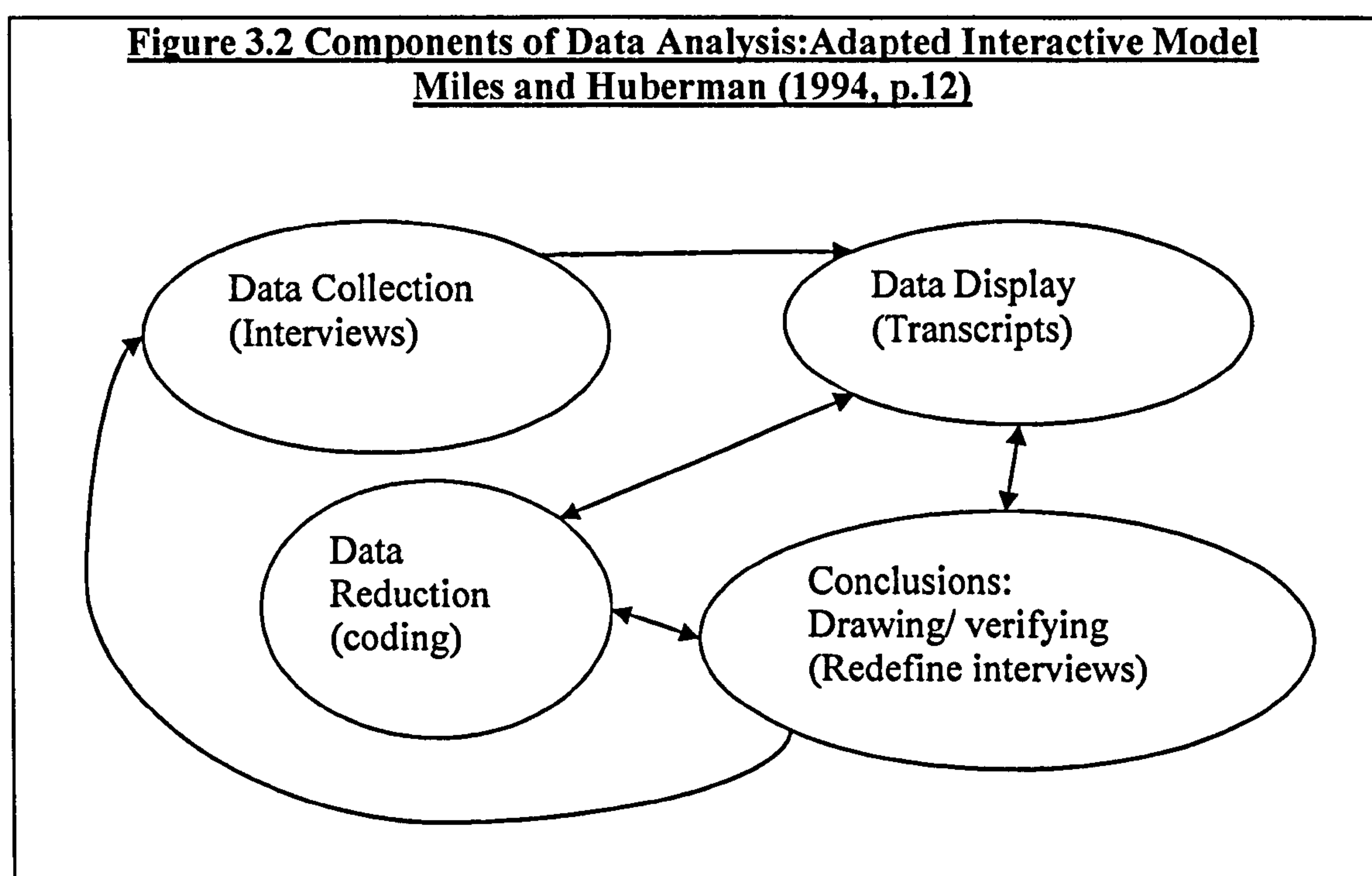
Patient data would provide 'true presence' (Bernardo, 1998) and user perspectives are critical to understanding patterns of medical technology use (Kaplin in Murphy et al, 1998).

The research then shifted towards the radiographers' opinions (second stage) within the empirical world of medical imaging departments. It was considered essential to explore radiographers' perspectives in the interaction, since these would significantly impact upon the patient experience and provide a more holistic and aesthetic (Sandelowski, 1994) understanding. In addition, this line of inquiry developed following initial analysis of the patient interviews, where it was apparent that the radiographer's role in the interaction was recognised continually by the patient group.

Radiographer interviews commenced with theoretical sampling, leading to extreme case sampling in the latter stages to develop themes further and ensure saturation. Although sampling strategies are explored later, it was recognised at the outset that any sampling decisions should be systematic and principled (Murphy et al, 1998).

The findings from the initial analysis of radiographer interviews revealed a great number of potentially important concepts which included an apparent 'reluctance' to undergo a scan; this was investigated in the final group to be interviewed, i.e. radiographers who had scans themselves. The reporting of 'others experiences,' (what Morse (2000, p.4) calls *shadowed data*) was highly significant throughout the study. It provided guidance on the range of experiences and the domain of the phenomena beyond the single participant's personal experience. Perhaps, more importantly, it provided direction for theoretical sampling.

A self-selecting sample of radiographers, who had also been patients, was interviewed by telephone after responding to an advert placed in the professional journal. By volunteering to be interviewed, rather than being approached directly, the interviewees clearly manifested a desire for their 'stories' to be told in order to help influence practice (Lewis, 2002).



Explanation of Figure 3.2

Figure 3.2 illustrates that the design followed a similar pattern to that advocated by Miles and Huberman (1994). They viewed the methodology of a research study, after data collection, from a three-streamed approach of data reduction, data display and verification or conclusion. The data were displayed within the transcripts, reduced by coding, and some initial conclusions were made. Finally, these initial conclusions informed further data collection by redefining the interview questions. The doubled headed arrows illustrate where each process informs the other and the link between each

component, which may also be unidirectional (single headed arrow), shows the nature of the interactive model. This interrelated process moves away from more conventional static designs such as planning, entering the field, collecting data, withdrawing from the field, and reporting findings (Morse, 1997) and gives some fluidity to the design process. Research designs must be able to adjust and modify in order to capture the very phenomena they are intended to inspect (Morse, 1997).

The design suggested by Janesick (1994) uses the metaphorical 'dance' to make the process more dynamic but even this was considered too rigid (Hammersley, 1989) for a developing inductive study and was therefore rejected in favour of this interactive model (Miles and Huberman, 1994). 'Thus do paradigms shape the interpretive imagination of qualitative researchers' (Morse, 1998, p.xiii).

Scientific Research (Section I)

The most critical component when addressing any research question is that of the most appropriate methodology (Miles and Huberman, 1994). The choices are opposing ones; traditional scientific inquiry versus humanistic post-positivistic research. Contrary to accepted belief, science is not neutral nor is it value-free; rather the practice of science is laid upon unambiguous philosophical fundamentals with respect to the nature and validity of knowledge and how it is derived (Baird, 1996; Polgar and Thomas, 1995). It is claimed by Popper (1957) that all scientific reasoning can be reduced to falsification since, as science advances, propositions 'fall away through rigorous testing' (Popper in

Brynner and Stribley, 1978, p.3). This would presumably leave theory at the mercy of time and knowledge before it could be disproved.

Traditional scientific investigators, or positivists (although few quantitative researchers would accept that term, since they claim to produce a set of cumulative generalisations and not a science of laws (Silverman, 2001)), believe that scientific knowledge is indifferent to who ever the observer is (Lee, 1998). Also, if the results are repeatable and cannot be falsified in any way they survive (Giorgi, 1998). Positivist sciences have often been seen as the 'crowning achievements of Western civilisation' and their assumed truth or reality can 'transcend opinion and personal bias' (Denzin and Lincoln, 1998, p.7). The positivistic paradigm takes a very mechanistic approach focussing on the facts and the observed world that is ruled by laws.

It is believed that only useful knowledge can emerge through a methodical disciplined process (Blumer, 1969; Hammersley, 1989). The problems of objectification and dehumanisation, which were explored previously (Barnard and Sandelowski, 2001; Cussins, 1996; Emerson, 1979) are, according to Kleynhams and Cahill (1991), compromised still further for patients when a scientific approach is taken. The problem is that positivist studies tend to eliminate 'the most significant elements of human life' (Hammersley, 1989, p.3). Quantitative methods focus on the common and 'discard the unique variance; the mean becomes the principal descriptive statistic' (Mc Dowell and Mac Lean, 1998, p.16). The Cartesian legacy still insists on studying the body by reducing it down to its component parts (Pearson, 1990) a point that was discussed earlier, in a radiographic context, by Emerson in *Behaviour in Private Places* (1979). Positivist investigations are therefore clearly based on cause, effect and objectivity

(Grbich, 1999) as opposed to post-positivist traditions which seek to understand society as socially constructed and not reduced to a generalised measurable component (Blumer, 1969, Charon, 2001; Jones, 1994).

Historically, Descarte's (1596-1650) view of science was considered to be the only approach towards new knowledge. It was not until Kant (1724-1804) challenged his view that perception was considered to be more than the 'act of observation' (Streubert and Carpenter, 1999, p.4), and that this so called 'hypothetico-deductive' paradigm was seriously questioned for not being able to measure human thought and emotions.

Just what is 'truth' or 'what is 'reality?' are very ambiguous questions. Positivists suggest that truth can be found by applying measurable influences (independent variables) that affect outcomes (dependent variables) (Grbich, 1999). These variables are then analysed for their statistical significance and general applicability. Even in a post-modern era, which is defined as 'incredulity towards metanarratives' (Lyotard in Rolfe, 2000, p.40) this empirical 'ideal' of 'measuring, analysing, replicating and applying knowledge' (Streubert and Carpenter, 1999) still remains as the 'gold standard' (Silverman 2001).

This model of science demands that methods have to be found that will make the social phenomena in question both 'observable and replicable' (Hammersley, 1989, p.126). The findings should withstand statistical analysis under a controlled (not natural) setting (Guba and Lincoln, 1989). Furthermore the understanding of human behaviour must be regulated in objective terms in order to establish a cause and effect relationship without

the personal accounts of the research participants or the researcher, thus taking a pure 'etic'¹ perspective (Baird, 1996).

The doctrine of positivist methodology of randomly selected and allocated samples being scrutinised under controlled settings (Guba and Lincoln, 1989) is firmly ingrained within the educational system. Most radiography students come from a traditional science background, with Advanced level qualifications such as biology, physics and chemistry and these form the foundation for their understanding of the real world. Since, as mentioned earlier, such sciences are laid upon unambiguous philosophical fundamentals (Baird, 1996, Polgar and Thomas, 1995), there may be an expectation on the students' behalf to foster additional theoretical imperatives towards the goal. This is what Denzin and Lincoln (1998, p.3) call a *bricoleur researcher* (using multiple methodologies within overlapping perspectives and paradigms to understand the world).

However, once at university studying for a radiography degree, there is still a distinct paucity of social scientific subjects when compared to the traditional 'hard sciences.' The importance of social sciences, in addition to traditional scientific knowledge, is recognised in a study by Castle (2000). In identifying the academic tribe of the profession, he concluded that radiographic knowledge encompasses the natural sciences and the humanities. This, Castle (2000) goes on to say, should be an expectation for a 'discipline that combines the use of technology with patient care,' (p.261) and is one of the main conflicts of paradigms within this study.

¹ Etic perspective is a 'world view' approach most often associated with quantitative research. (Anonymous, 2000)

Examples of positivist bias are still very apparent. An example of this is a key undergraduate research text: *Introduction to Research in the Health Sciences* (Polgar and Thomas, 1995), which initiates students into research philosophy, and highlights the apparent importance of positivist inquiry over that of post-positivist, by dedicating some 70% of the content to the former paradigm. The authors also speak of *all* research requiring explicit methodological principles for collecting and analysing data. Although systematic and methodical in nature, completely explicit methodology is rarely evident within inductive qualitative research (Murphy et al, 1998). This is essential in order to maintain a degree of fluidity (Morse, 1997; Streubert and Carpenter, 1999), a point that is regularly used by scientific researchers to question the rigour of post-positivist research. For this reason some qualitative researchers are labelled as ‘non-scientific.’

Positivist Social Science Research

Conversely, Giorgi (1993) only argues the case for the experimental methods when seeking to discover actions, and is concerned at the use of such techniques in social sciences. Indeed, it is only by recognising that the real world is dynamic that we can establish a humanistic approach in the investigation of meaning (Streubert and Carpenter, 1999). Berger (1963) goes further in stating that experimental psychologists have ‘commonly nothing more to do with anything human beings are or do ‘(p.24). The criticism levelled at qualitative methodologies is regarded by some as an attempt to establish one version of ‘truth’ over another (Denzin and Lincoln, 1998). Silverman (2001) takes a more balanced approach to the argument and encourages researchers to learn from each other. He claims that neither paradigm is either good or bad; the choice of method must rest with what we are trying to find out. The use of an initial quantitative study that may guide the main qualitative investigation is put forward as a potentially

productive approach (Silverman, 2001). However, many researchers reject this proposition 'out of hand,' claiming that the consequences of positivist approaches to human and social questions are considerable since:

Empirical approaches have proven to be of little value in answering some of the challenging and pressing clinical questions, especially where human subjectivity and interpretation are involved.

(Thorne 1997, p.28 in Streubert and Carpenter, 1999, p.1)

Attempting to conceptualise the social world in positivist terms can therefore produce distorted, inconclusive and irrelevant findings (Hammersley, 1989). Perhaps a more serious accusation is that it is often the considered opinion of post positivists that quantitative techniques 'rid[e] roughshod over participants' meanings' (Murphy et al, 1998, p.5).

Post-Positivist Research (Section II)

Qualitative research has a long and illustrious past in the human disciplines of Sociology and Anthropology, dating back to the 1920s (Denzin, 1998). Despite this, it has occasionally, and quite remarkably, been cited in publications as a 'new paradigm' (Easterby-Smith et al, 1991, p78). It was brought about by philosophers such as Descartes and Bacon who began to challenge the basic tenets of mediaeval quantitative approaches, and prominent scientists such as Galileo, Newton and Harvey. Descartes and Bacon, in addition to Kant (1724-1804), argued for new models to measure phenomena and the subjective human experience, in direct conflict with natural science methodologies (Polgar and Thomas, 1995, Streubert 1999). The impact of the Chicago School of Sociology was inspirational between the end of World War II and the 1970s, in what was the 'golden age of rigorous qualitative analysis,' and it was during this period,

(what Denzin and Lincoln (1998, p.17) call the 'second moment,') that Becker et al (1961) *Boys in white*, and Glaser and Strauss's (1967) *The Discovery of Grounded Theory*, made enormous contributions towards this research paradigm.

However, this field of research was very slow to evolve within the health professions. This was despite the fact that the popular quantitative approaches failed to measure important phenomena such as human values, cultures and relationships (Streubert and Carpenter, 1999).

More recently the practice of qualitative research has expanded into the clinical settings, including radiography (Dowd, 1990; Innes, 1998), where human experiences and interpretations are seen to be fundamental to our understanding of health care (Morse, 1987; Streubert and Carpenter, 1999).

The term 'qualitative' refers to the nature of the data which may consist of detailed descriptions, words or actions generated through interviews, observations, documents or diaries among other methods of data collection (Clarke, 1999, Polgar & Thomas, 1995). This paradigm is also central to finding out what people do, know and feel (Patton, 1990). It is charged with uncovering the 'emic' or 'actors' perspective' through the participants' point of view, who are therefore, 'gatekeepers' of their own knowledge (Anonymous, 2000, p.2). It is, however, much more than this, since qualitative research seeks to explore concepts, characteristics, metaphors and symbols. The significance of symbols is clearly identified within the tradition of Symbolic Interactionism.

Symbolic Interactionism and the Post-Positivists' Assumptions

Symbolic Interactionism focuses on subjective understanding, as well as perceptions of, and about, people, symbols and objects. Meanings are social products and reality (which is the ultimate goal of empirical research) is a social interpretation of people, symbols and objects (Charon, 2001). Human science can unfold meaning, inform, and critically create theory that is 'grounded within the data' (Glaser and Strauss, 1967; Streubert and Carpenter, 1999). The qualitative researcher is therefore often compared to the detective in a 'murder mystery' (Wiseman, 1974, p.317) starting out with few clues. Only by questioning and thought can the unknown become the known. The naturalistic inquiry of the radiological encounter has no predetermined course; the point is, according to Patton (1990), to understand the phenomena in their natural state. This is the opposite of experimental research which seeks to control, manipulate the natural and measure variables. It would seem, however, that, even within this paradigm, there may be a failure to encapsulate the full range of emotions and meanings within the naturalistic setting of the medical imaging department, and alternative perspectives may assist in that quest. This questioning of methods and traditions was often referred to by Blumer (1959) as his 'dilemma,' since he believed that social phenomena could be understood without considering all the objective and subjective factors (Hammersley, 1989). However, the move to quantify qualitative data is developing into one of the major threats to qualitative methods, and as such these techniques do not make qualitative methods more rigorous (Long and Johnson, 2000).

Justifying the methodology

A major source of confusion within the qualitative paradigm is an assumption that there is only one approach (Jacob, 1988).

While many common themes cut across the different perspectives what we shall find is that the rich tapestry of qualitative inquiry is woven together from many threads of different texture, colour, length and purpose.

(Patton, 1990, p.65)

Patton's quote was a source of initial justification, in that the methodological approach is certainly qualitative, but was followed by a period of uncertainty for the novice researcher in trying to negotiate the most appropriate qualitative perspective. In addition, consideration had to be given to the fact that research methods must not only be techniques for collection and analysis of data but should be employed 'within the context of their discipline's theoretical assumptions and perspectives' (Morse, 1978, p.15).

It has been stated by many authors (Glaser and Strauss, 1967; Denzin, 1978; Blumer, 1969) that one of the guiding principles of qualitative research is that of generating theory. This *theory-method linkage* as Patton (1990) calls it, means that how one studies the world determines what is learnt about the world, thus the method is crucial to the ability to generate the theory of interest. From the perspective of a novice researcher, with little experience or data collected, the research trail focussed on justifying the methods employed.

Naturalistic study initially appeared appropriate since it respects and stays close to the empirical domain (Blumer, 1978) but even within this framework, the choices of perspectives were wide and varied and on close inspection many could have been suitable. An oversimplification from Morse (1978) stated that if the aim of the study is

phenomenological then phenomenological methods should be used. It was however still unclear at this point, so nothing was excluded without justification at this early stage.

Ethnography

The first consideration was of an ethnographic method. Ethnography considers culture within organisations and would reveal perspectives, especially interpretation and applications of cultural perspectives (Wolcott, 1980). The focus is, however, on the individual and their meaning. In addition the data collection methodology of participant observer was deemed problematic in the natural setting of the radiology department. 'Scientific inquiry using observational methods requires disciplined training and rigorous preparation' (Patton, 1990, p.201). These are skills which were not at the disposal of the researcher.

Patton suggests that the length of time spent in the field depends upon the resources and time available to the researcher and neither of these were plentiful. In addition, since the skill of participant observation was not one previously engaged in, the question was raised: what should be recorded, particularly since it is not possible to record everything (Patton, 1990). A second issue was: for what duration should observation occur? These proved to be difficult questions.

As participant observer, negotiating and normalising (Jorgensen, 1989) myself within these two radiology departments cultures would take a significant amount of time. Moreover, the question of what was there to observe was a recurrent one. The patient, once inside the scan room, is positioned inside the 'bore' of the machine. Their face may be seen on a camera but any other form of non-verbal communication is 'lost' inside the

technology. To draw any inference from discrete movements appeared to be an impossible, as well as totally judgemental task. Recording the interaction was further hampered by the speed and efficiency of the radiographers (Reeves, 1999) in positioning the patient and leaving the room to commence the scan. The risk of assisting in the procedures, in what were very busy departments, rather than documenting the events, was also a concern since the non-participant observer 'can end up as a non-observing participant' (Whyte, 1984, p.29). Bearing in mind that the first stage of the study only focussed on the patients' experiences and the difficulties which this methodology produces, ethnography was, in conclusion, deemed inappropriate.

Phenomenology

Morse's comment quoted on the previous page (Morse, 1978), surely demands the following response: how does a researcher know if the study is phenomenological?

Phenomenology is a very common perspective coming under the umbrella of the qualitative paradigm devoted to the structure and essence of experiences for individuals (Patton, 1990). It is a major philosophical and social science perspective directed by the writing and theories of Husserl (1859 – 1938), Heidegger (1962, 1982) Shutz (1899 – 1959), and Merleau-Ponty (1962), amongst others. This tradition believes that we can only know what we experience, but equally that experience must be described, explicated and interpreted (Patton, 1990). The fact that phenomenologists believe that 'humans exist in the world as wakeful consciousnesses with little awareness of each other' (Grbich, 1999) with no involvement of the 'self,' did not seem, to the author of this thesis, to be concurrent with the symbolic or technological literature. Once again the initial shadowed data (Morse, 2001) indicated that the presentation of self (Goffman, 1959, 1971) was likely to be a common theme that could not be ignored.

Like most social science perspectives there is no 'reality,' only experience of it. This perspective certainly had potential to extract meaning from the data. It was however unclear to me if the patient undergoing a radiological scan could best be investigated as part of a lived experience.

The step by step methodology (Crotty, 1996) provided a potential guide through the research maze for the novice researcher. However, the notion of phenomenological reduction (bracketing) in order to suspend all empirical and metaphysical presuppositions (Grbich, 1999) seemed to be unrealistic and appeared to remove the theoretical sensitivity brought to the study by the researcher (Murphy, et al, 1998). It was hoped that the theoretical sensitivity brought to the study would enrich the understanding not detract from it. The essences or core meanings that are bracketed, analysed and compared would provide an insider's (or emic) perspective to generate theory. The complications of participant observation, which was one possible method (but not the only method) of data collection, had already been rejected. Now the notion of researcher bracketing was felt, for the reasons outlined by the author, to be insurmountable. In addition, Crotty (1993) suggests that much of the present day nursing research being done under the umbrella of phenomenology actually bears no resemblance to authentic phenomenological research. Rather, many are drawing on the interactionist tradition of Blumer (Baird, 1996). For a study to be deemed as phenomenological, 'it must describe what the phenomenon looked like before people learned how to see it in a particular way' (Marton, in Baird, 1996, p.172). A task that, if indeed possible, would undermine the very essence of this study.

Grounded Theory

An increasingly common analytic inductive technique in health care research is grounded theory which provides a rigorous guide to data collection and analysis in order to generate substantive and formal theory (Grbich, 1999). Miles and Huberman (1994) give the impression that 'valid' qualitative research will allow them to become 'scientific' in the positivist sense of the word. The findings which are 'grounded' in real world patterns (Glaser and Strauss, 1967) go some way to addressing Blumer's (1969) 'dilemma' but ignore Morse's argument (1978) that qualitative research should be more rigorous by quantifying the findings.

Grounded theory has a close association with the Chicago School of Sociology and it is therefore similar to Symbolic Interaction in some respects, where an attempt is made to understand the meaning of the interaction for the participant (Grbich, 1999). However, it takes its point of departure with the constant comparison of data and with little emphasis on the symbols, signs, language and self, critical to the latter perspective. Grounded theory assumes a 'strongly determined' (Glaser and Strauss, 1965, p.270) relationship between variables, where 'Symbolic Interactionism emphasises creativity and indeterminism of human action' (Hammersley, 1989, p.204).

Through immersion in the data, and in particular the developing amount of shadowed data² (Morse, 2000), a perspective that made sense of lives and behaviour was emerging as the most appropriate to this study. Study of the ordinary, the routine, and the

² Shadowed data – participants may discuss the experiences of others, how their own experiences resemble or differ from others. (Morse, 2000, p.4).

development of roles through socialisation suggested that a creative, humanistic and perhaps aesthetic methodology would be more appropriate.

Aesthetic Knowing

The point made within the literature review by Leigh (2002), could have gone unnoticed when the focus of the study now turned to the methodology. When referring to the technological world Leigh (2002, p.113), said, 'aesthetic knowing' is now hugely important. By this he meant that the knowledge of creative expression and the intuitive application of this knowledge can often be lost in the search for empirical reality. Aesthetic knowing is however impossible to define and measure. It is according to Carper (1978):

The perception of abstract particulars as distinguished from recognition of abstracted universals. It is the knowing of the unique particular rather than an exemplary class.

(Carper in Streubert and Carpenter, 1999, pp.4-5)

Similarly, I considered the essence of my research as trying to 'capture' the abstract, and the uniqueness of the radiological encounter, in order to offer participants new perspectives on their problems (Silverman, 2001).

Denzin and Lincoln (1994) recognise that since reality is dynamic, any knowledge of reality will only be imperfect. How then do patients and radiographers attain this knowledge of reality in a meaningful and intellectual manner? Streubert and Carpenter (1999) claimed that there were four ways in which nurses come to 'know:' Empiricism, the first method under consideration, is predictable and essential for the generalisation and dissemination of knowledge. However, the concepts of objectivity and reduction 'defy the authentic fibre of humans and their social interactions.' (op.cit. p.4), so this

approach was rejected. The second is that of aesthetic knowing, or the art of nursing that appreciates subjective expression and patterns of phenomena. Even within qualitative research, there is growing consensus that understanding using prescribed methods of analysis is failing to produce 'new and novel insights' (Hunter et al, 2002, p.388). This method was therefore seen as most appropriate and this element of creativity is further elucidated towards the end of this chapter.

'Self' and all of its complex ramifications is the third generator of knowledge in nurses (Steubert and Carpenter, 1999) and unless radiographers know themselves, they cannot seek to understand others (Shannon and O'Connor, 2000). As discussed in chapter 2, the 'self is produced 'anew' within the interaction (Cahill, 1986; Charon, 2001) and so, the use of self knowledge within the perspective of Symbolic Interactionism should yield a plethora of meaning from that data. In addition, the development of theories surrounding role play and acting within Dramaturgy, such as *the presentation of self* (Goffman, 1959), and the wearing of metaphorical 'goggles,' also outlined in the previous chapter (Morrison and Burnard, 1991; Mead, 1934), make the analysis of this third type of knowing by Symbolic Interactionism and Critical Dramaturgy appear to be most appropriate.

The fourth and final way of knowing is that of morals or ethics: what is right and wrong. Participant's conduct and ethical values, which are often deeply entrenched in human experience (Blumer, 1962), can only be interpreted within the framework of a qualitative paradigm where different perspectives can generate and expose human feelings.

Radiography Research

Qualitative research identifies patterns in phenomena, not just the definite facts that may be common to many (Patton, 1990, Silverman, 2001). For example the studies on claustrophobia in MR scanners (Hughes, 1994; Katz et al, 1994; Spouse, 2000) have, without exception, been of a positivist nature generating wide-ranging statistics with little attempt at discovering meaning or developing theory. For a clinical radiographer this may be seen as important research, perhaps contributing towards evidence-based practice, but such a methodological approach would simply be unacceptable for the social scientific researcher (Silverman, 2001).

Who is best suited to undertake the research is also questionable. Pinch (1993) suggested that more is learnt about the phenomena when the researcher is a 'stranger.' However, in order to attain theoretical sensitivity (Glasser and Strauss, 1967; Murphy et al, 1998), it was imperative to have a radiographer conducting such a study. Strauss and Corbin (1990) point to the importance of theoretical sensitivity derived, not only from the literature, but also from the professional and personal experience which the researcher brings and develops further during the study. Although this would inevitably include an element of researcher bias, it also has the potential to add richness to the data collection and analysis (Streubert and Carpenter, 1999). Nixon (1999) considered it most appropriate for radiographers to do research in their field, since only they can acquire the values and beliefs (and biases) of their own profession.

Since all knowledge is local and culturally influenced within organisational sites (Denzin and Lincoln, 1998), the naturalistic setting of radiology departments was the site for all data collection. In addition, the investigator set out to understand the interactions within

the daily reality of participants (Patton, 1990) within the naturalistic setting; a decision that would have been supported by Blumer (1979, xxiv) since:

Naturalistic research respects the nature of the social world. At the level of method, this involves the investigation of a given area of happening in terms of its natural or actual character, as opposed to the observation of a surrogate or substitute form.

The Methodology of Radiographic Research

As has been mentioned, radiography is far behind nursing in theory development and there is still very little theory within the profession (Reeves, 1999). Subsequently;

Failure to develop a solid research base will be to the detriment of radiography relative to other health professionals and will leave a yawning gap in terms of improvement in healthcare.

(Mc Kenna et al, in Nixon 1999, p.238)

Harris (2000) recognised the need for radiographers to construct a body of knowledge by research and publication appropriate for the profession to develop theory. It is considered that the sign of maturity of a profession is its confidence to scrutinise its own methodology (Nixon, 1999) so some reflection upon the paradigms used was critical. A cursory inspection suggests that the vast majority of radiography research is, not unsurprisingly, of a quantitative nature; although Lewis (1998) stated that much of the current research tends to lie in the area of qualitative research, a claim that is not yet supported by the published literature. However, the important point is made that:

By looking at some of the intellectual and pragmatic elements of research which suits a radiographic context, new research possibilities in diagnostic radiography may become apparent.

(Lewis, 1998, p.205)

The choice of methodology should be determined by the research question (Silverman, 2001) but a sample of publications reveal that few radiography researchers have employed true post-positivist paradigms (Innes, 1998; Reeves and Murphy, 1999). For example, studies that set out to discover understanding of patient anxiety (O'Connor and Cotter, 1998) and pain (Hafslund, 2000), within the naturalistic settings of MR and mammography departments respectively, both choose 'objective' strictly positivist methodologies. It is suggested that this may in part be due to the fact that the knowledge base for radiography was developed through the research activities of medical practitioners and scientists (Nixon, 1999).

Like nurses, radiography researchers must be prepared to challenge and contradict the status quo by exploring and presenting alternative data (Nixon, 1999), and by adopting new structures and methods (Jordan, in Nixon, 1999). By using the perspectives of Symbolic Interactionism and Critical Dramaturgy, this research together with other substantive qualitative studies (Baird, 1996; Reeves, 1999), will seek to bridge that 'yawning gap' (op.cit. p.238) with other health care professions.

Tackling the Question of Rigour (Section III)

All research must be open to critique and assessment (Long and Johnson, 2000; Patton, 1990) by some form of rigorous evaluation. The term 'rigour' leads one to think of detachment, objectivity, and standardized rules (Davies and Dodd, 2002). However, it is noted that the ambiguity identified within qualitative methodologies is no more apparent than in the discussion of rigour. For example, Hammersley (1990; 1992) spoke of two broad post-positivist criteria of reliability and validity adapted to cater for qualitative

data. However, others argue that these criteria are wholly inappropriate, and as distinct paradigms they should employ different criteria to effectively judge research rigour (Lincoln and Guba, 1985).

But the ambiguity does not end there, since it is considered that research findings should also be judged on their value in 'terms of isomorphism with the participants perspective' (Murphy et al, 1998; Lincoln and Guba, 1985), or in terms of aesthetic value (Tesch, 1991), attributes particularly relevant to this study. It would therefore appear logical to consider in the first instance the traditional positivist criteria and how they may be adapted to the qualitative approach.

Reliability

This is defined as the constancy of a measurement tool or procedure (Polgar and Thomas, 1995, p.163) and is tailored by Hammersley (1992, p.67) into the qualitative paradigm by definition as the 'degree of consistency with which instances are assigned to the same category [content analysis] by different observers or by the same observer on different occasions.' On the face of it, these definitions appear to be very close in operation and outcome. However, both assume that data generation can be standardised and has no element of bias (Long and Johnson, 2000). Certainly this is not the case for qualitative research. Others strongly believe that qualitative and quantitative research should be seen as two incommensurable paradigms (Lincoln and Guba, 1985; Sandelowski, 1986).

Denzin and Lincoln (1994) present a further classification of these terms, referring to 'reliability' as 'dependability'. However, this is also very similar to the other terms and 'there is nothing to be gained by using alternative terms which prove to be identical to the

positivists' approach' (Long and Johnson, 2000, p.31). The term 'dependability' is expressed as the stability of data over time, but is not in itself a criterion, and in fact, the underlying concepts appear to be identical (Long and Johnson, 2000). Not surprisingly Robson (1993) and Koch (1994) merely consider 'dependability' to be analogous to reliability. Brink (1991, p.176), in trying to resolve this matter, proposed the following three tests of reliability for qualitative research:

Stability: When asking identical questions of an informant at different times produces consistent answers.

Consistency: Integrity of issues within a single interview remain concordant.

Equivalence: Alternative forms of question with the same meaning within the interview.

Although perhaps more reflective of the qualitative methods, (and each is considered within the data collection strategies) the criteria appeared to be difficult to implement since there was little latitude and it appeared 'inappropriate to standardise highly variable data collection methods' (Long and Johnson, 2000, p.31). Perhaps the second measure of scientific rigour would be more amenable towards qualitative inquiry?

Validity

Validity is normally established by three criteria: content validity is concerned with the sample, the degree to which the phenomenon is addressed, and how precise this is to reviewers. The second criterion is related validity, where the research instrument and findings are measured against a standard, and finally construct validity which considers the location of the instrument to the construct in question (Long and Johnson, 2000, p.31).

As will become apparent, these criteria are not necessarily easy to identify or measure within the qualitative paradigm.

The standard definition of validity is the 'accuracy of a test or measure, the true value of a test' (Polgar and Thomas, 1995, p.165). Once again Hammersley's (1992) adaptation into the qualitative domain is very similar, reflecting the requirement that any claims to knowledge must be supported by evidence. He describes it as 'an account that is valid or true [since] it represents accurately those features of the phenomenon that it is intended to describe or theorise' (Hammersley, 1992, p.69).

As with reliability, qualitative researchers are aware of the requirement to produce valid and true data by using alternative terms. Guba and Lincoln (1989) once again prefer a different term, that of 'credibility.' They argue that validity 'refers to the naïve reality of positivism and an attempt to establish isomorphism between findings and objective reality' (Long and Johnson, 2000, p.31). This obsession for finding new labels for what, in effect, are identical concepts is very misleading (Hammersley, 1992) and is further compounded within feminist research (Hall and Stevens, 1991). Hall and Stevens (1991), in particular, seek the credibility from the participants rather than external reviewers. Using the interviewees as the 'standard,' (criterion related and content validity) since there is no objective standard in qualitative research.

Although qualitative research must be rigorously evaluated, it cannot be evaluated in the same sense of replicability over time and across contexts since, as mentioned earlier, only a snap-shot in data saturation is likely to be achieved (Morse, 2002). Furthermore, the common view of all research is that it must remain objective and free from researcher

bias (Davies and Dodd, 2002), a claim that is impossible to verify for either paradigm.

Historically;

There seems to be an underlying assumption that mathematics offers an objectivity that words cannot by identifying categories and determining statistical significance in social data.

(Davies and Dodd, 2002, p.282)

To this end a battery of statistical tests have been developed to measure and test scientific research, but they require standardised methods of data collection, which do not permit researcher interaction, leading to sterile opinion and negating the opportunity to develop a rapport (Patton, 1990; Davies and Dodd, 2002). It is concluded therefore that the issue of rigour must be considered, not as a quantitative (or a mask for a quantitative) approach, but rather, through reflection and reflexivity.

The means to establish rigour

While it is recognised that qualitative analysis is highly creative and should not be constrained by standardisation, there must also be a technical aspect that is, 'analytically rigorous, mentally replicable, and explicitly systematic' (Patton, 1990, p.462). In order to conform with the technical aspects, Hammersley (1992) suggests alternative ways of establishing social science rigour. Reliability can be addressed by careful audit of the research decision trail (Koch, 1994) and validity substituted for self-description, reflective journal keeping, respondent validation, prolonged involvement, peer debriefing and triangulation. Each element is now considered in relation to this study.

Audit of the decision trail

The purpose of documenting the decision trail is to allow others to decide on the value of the study by comparing it with their own conclusions from the same documentation (Long and Johnson, 2000). This will also improve the replicability of a qualitative study (Morse, 1994). There has been a careful attempt to 'lay the path' of the decision trail in this chapter and subsequent analytical chapters. It is stressed however, that it should not be a truly mechanistic approach that would restrict the uniqueness of each interview (Sandelowski, 1986), so important in an inductive study.

Self-description and reflective practice

The identity of the researcher has already been established as part of the process but in order to ensure credibility the personal and professional details of the researcher are outlined, where appropriate throughout the study, and any data collection, analysis, or interpretation, which has been influenced by the researcher's own beliefs is fully acknowledged (Patton, 1990). Reflection is also an integral part of the whole study. In addition to the issue of reflexivity mentioned later in the study, reflexivity drawn from the research diary is also introduced at critical moments throughout, when the researcher reproduces his own viewpoint (Porter, 1993). Rather than eliminate or 'bracket' (Crotty, 1996) his own beliefs, an attempt has been made to incorporate and comprehend them (Hammersley and Atkinson, 1995).

Respondent Validation

In order to enhance the accuracy of the findings, all radiographers interviewed 'face to face' were given the opportunity to check the account of their transcript. It is claimed by Brink (1991) that this also addresses stability over time. Although clearly a useful

strategy to use, Hammersley and Atkinson (1995) are cautious about placing too much emphasis on these so called 'member-checks' since some aspects of behaviour or non-verbal cues may be dismissed or not identified at a later date by respondents. It is suggested that the check is undertaken by a third party, as it will add further (objective) strength to the study (Long and Johnson, 2002). However the researcher was of the opinion that this might also compound the difficulties above and introduce further confusion about the accuracy of the transcripts.

Long and Johnson (2002) conclude that 'while respondent validation may be a useful addition to the means of assessing the rigour of study, the results, whether supportive or not, must be treated with caution' (Long and Johnson, 2002, p.34). It was not possible to do member checks on patients or radiographers interviewed by telephone for reasons of ethics, anonymity and geographical spread.

Prolonged Involvement

Although 'one-shot' interviews were performed over the course of the study, a long period was spent in the respective departments, organising and explaining the research as well as performing the interviews. This time made the researcher more sensitive to 'discrepancies between meanings presumed by the investigator and those understood by the target population' (Kirk and Miller, 1986, p.30-31). This was particularly important when identifying local language and roles. Guba and Lincoln (1989) recommend that this time is spent building up trust and rapport (Patton, 1990) within the departments. Finally, prolonged involvement enabled the research practitioner to bring substantial theoretical sensitivity to the research, hopefully with considerable benefit.

Peer Debriefing

To complement the key role of the research supervisor it is suggested that peer debriefing with knowledgeable colleagues will enhance the credibility of the study (Robson, 1993). This was done on a continuous basis throughout the period of investigation as initial data were analysed and the methodology started to emerge. The preliminary idea was presented to the radiography profession in a publication: *How was it for you: Imaging Technology and the Patient Experience* (Murphy, 1999). There were some very encouraging responses to this article in the letters section the following month. Once the majority of the patient interviews had been completed and partially analysed, another article, taking only a small proportion of the data, was written in the *Journal of Diagnostic Radiography and Imaging*, (Murphy, 2001a). Finally, a paper entitled *Understanding the Humanistic Interaction with Medical Imaging Technology*, Murphy (2001b) appeared in *Radiography* which focussed on the embryonic data. The two latter journals are both peer-reviewed. Although now somewhat dated, since the concepts and methodology have evolved and changed, these publications gave the profession the opportunity to comment on the research, and helped the researcher to focus on initial findings, so preventing premature closure of the search for meaning and patterns (Long and Johnson, 2002). In addition, a conference paper was presented (Murphy, 2002). Conference presentations are recognised as an excellent means of submitting 'method and findings to other researchers, so as to attract and answer to critical comment' (Long and Johnston, 2002, p.34).

Finally, inter-rater reliability has strength in studies which use semi-structured interviews, since the questions are asked in a consistent manner (Long and Johnson, 2000; Patton, 1990). Therefore a knowledgeable colleague, who was not a radiographer but an

experienced researcher, was blinded to the findings from the initial analysis, recoded a selection of the transcripts (Allen, 2002) in order to confirm or refute the 'presumed' meaning of the data presenting the reality of the participants. A literature search failed to provide any guidance on this process. In view of this a pragmatic approach was taken whereby every tenth patient interview and one quarter from each radiographer group were reanalysed and a meeting then followed to discuss the main themes.

The researcher found this engagement with peer debriefing to be particularly stimulating. It had two major benefits; firstly it guided the researcher through the complexity of the methodology and secondly it left a very transparent research trail.

Triangulation

Triangulation can take several different forms but it essentially takes the form of multiple methods in order to increase confidence in results. Streubert and Carpenter (1995, p.244) identify triangulation as being particularly suitable for multifaceted and complex phenomena and it also gives a study 'sophisticated rigour' (Denzin, 1989, p.234).

By using the perspectives of three groups in the imaging departments; users, operators, and operators as users, this researcher employed *triangulation of sources* (Patton, 1990). This produces a much stronger 'theoretical framework and thus a better basis for clinical practice in the health care professions' (Polit and Hungler, 1991, p.522).

To complement the argument for multiple methods the researcher has also used *triangulation of perspectives* (Patton, 1990) by looking for other ways to organise the data that might lead to different findings. The use of triangulation in this study is not only one of data collection from different sources, as in many qualitative studies, but one

that also hopes to overcome the intrinsic bias which derives from using a single source or analytical perspective (Denzin, 1970).

The Interview process (Section IV)

Since research paradigms shape the focus of research (Morse, 1998) and of the researcher, interviewing itself is profoundly influenced by research philosophy. Price (2002), a nursing researcher, argues that

The research paradigm employed by the researcher is at least as important as the contextual difficulties of conducting interviews in the field, in shaping interview practice.

(Price, 2002, p.274)

Interviewing provides the potential for the investigator to enter the world of patients and their health experiences (Patton, 1990; Price, 2002). Since it is not possible to observe everything all of the time, interviews provide a method of extracting rich descriptive data (Patton, 1990). While the method of participant observation had been ruled out, standardised open interviews (Silverman, 2001), more commonly known as semi-structured interviews, were used as the data collecting tool. Positivists would argue for pre-tested, closed interviews in order to increase reliability, in particular the subsets of stability, consistency and equivalence (Long and Johnson, 2000). However, this survey research style (Silverman, 2001) is reductionist and will often miss the true meaning and perspectives of the informants (Grbich, 1999). Questions would have to be presented in predetermined order, allowing for little deviation from the format (Denzin and Lincoln, 1989). On the other hand, totally unstructured interviews may involve the interviewer asking no direct questions, but simply asking the interviewee to think reflexively (Keedy,

1999). This process would be unlikely to generate meaningful data from the general public and would be difficult to justify in terms of rigour.

The semi-structured style provides greater latitude and is a more common technique in a qualitative study (Morse, 2002). Denzin and Lincoln (1998) advocate that a semi-structured interview can also assist in analysis since it is possible that each respondent's answer will be found next to the same question. This type of format can increase reliability and construct validity but also permits the researcher to be more probing with questions and explore explanations. This is, therefore, a more meaningful encounter since points are not immediately 'pigeon-holed' into standardised categories (Patton, 1990).

Initially, it is possible that the researcher feels uncomfortable in the interview situation (Denzin and Lincoln, 1998). Since the quality of the interview is very much dependent on the interviewer (Patton, 1990), it is often found that productive data only emerges after the initial interviews (Denzin and Lincoln, 1998). It is also suggested that 'face to face' interviews allow for non-verbal expressions to be noted (Polgar and Thomas, 1996); what Begley (1996) calls 'triangulation of communication skills'. These attributes of behaviour are all omitted with self-report questionnaires. It should however be noted that the 'face to face' encounter is not like 'normal' social dialogue, since issues of power and status are inherent within such encounters (Mishler in Price, 2002) and interpretation of non-verbal communication can be problematic or misleading (Begley, 1996).

In an early text, Denzin (1970, p.133-8) highlights several problems which can 'distort interviewees' responses. Each is addressed overleaf.

➤ **Respondents possessing different interactional roles from the interviewer.**

Failure to recognise these facts before the interview process can lead to 'mis-understandings' by both parties. While positivists acknowledge that both parties do interact, they insist on this interaction being defined within the protocol (Silverman, 2001). Social scientists however, consider the interaction as part of the interview.

The 'power' differential inherent within the interview due to roles (Brissett and Edgley, 1975; Charon, 2001) can be 'softened' by the researcher by using a private, comfortable setting for the interview. However, complete elimination of this influence is not an option. In addition, there will be different expectations from the researcher and interviewee; care must be taken to ensure that signs and symbols convey common meaning (Mead, 1934; Bulmer, 1969; Charon, 2001). Professional status is considered as part of roles in this section, although Denzin (1970) preferred to differentiate between the two. An explanation and self-disclosure before the interview tape was started in a private setting (Grbich, 1999) with the aim of addressing this problem.

➤ **The problem of 'self-presentation,' especially in the early stages of the interview.**

Goffman's analysis of 'self' and impression management, is hugely important in the actual interview. Douglas (in Grbich, 1999) speaks of protective fronts of which only the first few layers may be revealed and there is a risk that the public, rather than private, views may be delivered. In other words, the interviewee may give the answer they think the interviewer wants (Grbich, 1999). This does not, however, just refer to the interviewee, for the interviewer's presentation is also critical and will lead to a degree of shifting subjectivity. In other words, the researcher is the instrument, and stimulus

responses are not part of the interview interaction (Reissman, 2002). The style of interaction through the use of verbal and non-verbal cues encouraged the interviewees to feel confident in 'elaborating on their data, so providing increasingly rich data' (Marsland, 1998, p.458). The researcher became more sophisticated at presenting himself in order to elucidate more information as the study progressed.

- **The problems of 'volatile,' fleeting relationships to which respondents have little commitment and so can fabricate the tales of 'self' that belie the actual facts.**

This was always going to be a potential problem with one-shot interviews. As such the interviews are opportunistic and unscheduled (Grbich, 1999), certainly with the patient interviews. An issue was: Should the researcher accept the information without question or regard it as 'one facet of the multiple aspects of 'truth?''(Grbich, 1999, p.87). The researcher adhered to the latter approach since who is to say that the responses given do not represent reality, since reality is a unique entity (Sandelowski, 2000).

- **The difficulty of penetrating private worlds of experience.**

Professional respect and sensitivity (Patton, 1990) together with a friendly and neutral approach (Abbott and Sapsford, 1998) would encourage the participants to reveal more than the top layers of information (Douglas in Grbich, 1999). In addition the interview setting is crucial, giving the interviewees non-recorded 'settling down' time (Grbich, 1999). Developing a good rapport was essential. However, the fact still remains that in order to penetrate personal experiences the interviewer must know what he/she needs to find out, ask the right questions and give appropriate verbal and non-verbal feedback

(Patton, 1990). The absence of non-verbal feedback during the telephone interviews is considered later, but certainly it has the potential to distort the communication.

➤ **The context of the interview.**

The setting is described later, but wherever the interview takes place, it should place both parties into a 'frame' that should be a natural one, especially for the informant. For example talking about work is best done in a work's staff room (Abbotts and Sapsford, 1998) or as in Goffman's (1959) space analysis 'backstage' and this was where the radiographer interviews were carried out.

Having reflected on the possible distortions, the researcher concluded that interview 'accounts are not simply representations of the world; they are part of the world they describe' (Hammersley and Atkinson, 1983, p.107). The execution of the interviews together with the questions asked is discussed later in section five of this chapter.

Issues of Sampling (Section V)

A common misconception in qualitative inquiry is that numbers of interviews are unimportant (Sandelowski, 1995). It is often stated that quality of the information is the critical factor (Patton, 1990) and the issue of 'how many?' is usually avoided with statements such as the following:

Rather than sampling a specific number of individuals to gain significance based on some statistical manipulation, the qualitative researcher is looking for repetition and confirmation of previously collected data.

(Streubert and Carpenter, 1999, p.23)

While on a theoretical plane, the idea of theoretical saturation, that is, repeating data collection until no new concepts emerge (Miles and Huberman, 1994), appears sensible and logical; in practice it is problematic. Glaser and Strauss (1967) gave no guidance on how, and when, it is known that a category or theme has been exhausted. To compound the problem, saturation (or as Lincoln and Guba (1985) prefer to call it 'redundancy,') may possibly be a myth (Morse, 1989) and the best the researcher can attain is to 'saturate the specific culture or phenomenon at a particular time (Morse in Streubert and Carpenter, 1999). This point once more shows that qualitative inquiry is endemic with ambiguities (Patton, 1990).

Sample size is a balancing act between maximising the potential of the purposeful sample (Patton, 1990), without drowning in the data at one extreme, and the danger of over-generalising with very small numbers at the other (Denzin and Lincoln, 1998).

Like grounded theory, the process view of generating theory is led by data and interpretations of data. Therefore it is logical that the process of data collection is controlled by emerging theory. Glaser and Strauss (1967) termed this theoretical sampling.

Hammersley (1985), Miles and Huberman (1994) (amongst many others) define it as sampling 'in which new observations are selected to pursue analytically relevant distinctions rather than to establish the frequency or distribution of phenomena' (Murphy et al, 1998, p.95). This suggests that smaller samples should be directed towards making possible generalisation to theoretical and not statistical propositions. Analytical generalisation may hope to show the scope of the theory but as Bryman (1998) stated, it

is not the 'typical nature' that matters. What matters is whether the experiences of patients (referring to *Awareness of Dying*, Glaser and Strauss, 1967) 'are typical of the broad class of phenomena to which the theory refers' (Murphy et al, 1998). So, rather than seeking to sample a random selection of hospitals in the country, this study sought to investigate the theoretical situations in two naturalistic settings. Through this approach therefore, the theory gradually moved towards completion, with theoretical sampling providing the driving force for this process.

Selecting the participants

Hospital patients who had just experienced the phenomenon of a CT or MR scan were selected since they were active informants in the inquiry (Streubert and Carpenter, 1999) and could therefore assist in understanding the human/technological interactions in the radiology department. These individuals were approached following full ethical clearance from the NHS Trusts concerned (Appendices 2 and 3). The type of sample selection is called purposeful sampling (Glaser and Strauss, 1967) although more recently known as, and referred to above as, theoretical sampling (Lincoln and Guba, 1985; Patton, 1990). It is however described fittingly in this situation by Abbott and Sapsford, as 'the selection of groups, initially or as the research progresses, to explore aspects of the developing [themes]' (1998, p.127). This would agree with Miles and Huberman's (1994) assertion that in order for theory to develop, some form of 'theory driven' sampling should occur.' All this sample had experienced a radiological scan procedure but it should be noted that no earlier research had been done of this nature that could be tested or modified. The situation was different for the radiographers and as will be revealed later, the sample for telephone interviews was however theory driven.

Ethics

Before the study could commence, an application for ethical approval from both NHS Trusts was sought, since:

Research involving human participants inevitably raises questions of ethical propriety. The majority (but not all) of these ethical issues arise when participants (who may also be patients) are exposed to risk and/or harm, which may or may not deprive them of something which might be beneficial
(Pettigrew, 2002, p.21)

The researcher was invited to attend each ethics committee meeting in order to present and support the application. The study did not involve any additional treatment for the patients and was not considered to be contentious in any way, but ethics committees must ensure that the actors can neither be intentionally deceived nor harmed (Burgess, 1984). The application fulfilled the set of guidelines (Smith in Murphy et al, 1998) for ethical practice with consideration being given to informed consent, confidentiality, subjects' rights, and subjects' risk-potential benefits ratio.

Committee members at the first hospital were largely supportive of the study; the researcher felt that this was helped by having a consultant radiologist on the panel. The consultant worked in the same department as the researcher and was aware of the nature of the study. Following some general questioning the committee were happy to give the study full approval subject to some minor amendments to the patient information sheet:

1. It was to be made clear that the study was contributing towards a higher degree.
2. The patient had to be informed that the study did not form part of the actual scan, and therefore they were not obliged to participate in the study.
3. The information sheets needed to be bi-lingual (Welsh Trust).
4. The study would not interfere with the normal operational pattern of the department.

5. Patients' medical conditions or results of examinations must not be disclosed or discussed.

A copy of the amended patient information sheet is enclosed in Appendix 1.

In addition, the researcher was requested to inform the relevant medical team before approaching any patients to check that they would be suitable for interview (i.e. they had no underlying problems). By doing this the 'gate-keepers' were still controlling access by 'steering the researcher away from those who might be disturbed or harmed by the process' (Abbott and Sapsford, 1998). The committee requested a progress report in 12 months.

The amended documentation was resubmitted and full ethical approval was granted on Wednesday 17th March 1999. This certification together with authorisation to extend the sample to outpatients referred from the orthopaedic department is enclosed in appendix 2.

The second application met with some unforeseen resistance from the ethics committee. There appeared to be little or no understanding of qualitative methodologies and concern that the findings might reflect badly upon the trust. This was despite a full explanation and a statement of confidentiality being given at the meeting. The words of Murphy et al (1998, p.155) rang out 'the greatest risk in qualitative research arises in relation to the dissemination of research findings.'

A more scientific approach was requested which is a typical response within hospital committees and funding bodies (Silverman, 2001). Also, since the researcher was not an

employee of this second trust, access to patients was further complicated. The committee requested further changes to the information sheet (already approved by the first committee). This would have produced disparity between the approaches and if the interviewees were given different information prior to the interview the data might have varied as a result. Thus the semi-structured style and the ease of analysis (Brink, 1991) together with the credibility and dependability (Denzin and Lincoln, 1994) of the inductive process would have been compromised. It was decided therefore to withdraw the application.

To the novice researcher this represented a considerable 'set back' in terms of time and confidence in the justification of the research. It was the first of many obstacles to be overcome (Denzin and Lincoln, 1994). It was, however, still imperative that the developing themes and theories be sampled at another site, and so after a period of another eighteen months full ethical approval was granted on the same terms as the existing site by an NHS Trust in England, or hospital A as indexed in the interview transcripts (Appendix 3).

Performing the interviews

Following a short presentation to all staff concerned in each department and a declaration of ethics approval, the data collection began. On the day when the researcher was present, which was on an infrequent basis, radiographers working within CT or MR units were asked to identify potential informants. Many patients could not give their consent to be interviewed before the examination and it was considered unjustified to delay other patients with appointments in very busy departments. In addition, point four of the conditions specified by the ethics committee which related to maintaining the normal

flow of patients in the departments also had to be adhered to, thus interviewing patients before and after scans was not an option. It became clear after the initial investigations that the interview would vary in duration and the researcher did not wish to impose any time restraints. Rich information can often be disclosed when the interviewee is more relaxed in the interview situation, and this may take some time (Abbott and Sapsford, 1998).

In order to address the *common pitfalls and limitations* of the interview process *indicated in italics* (Field and Morse (1985, p.67-73) the interviews were conducted in the following manner:

All patient interviews were conducted in a private room with the engaged sign on the door, and with the telephone 'off the hook' to keep the flow of the conversation and ensure minimal *interruptions*. Being a busy department this was not always respected and medical and office staff did occasionally enter the room.

High quality interviews require concentration on the part of the interviewer and interviewee. Being away from the patient waiting areas, the room provided a barrier from *competing distractions*. The strategies employed to make the interviewee feel comfortable included a comfortable chair and a verbal statement of anonymity in addition to the one written on the consent form (Appendix 1).

The use of a tape recorder may result in greater refusal rates and sanitization of expressed views for fear of reprisals (Denzin and Lincoln, 1998). However, in addition the mere presence of the tape recorder can lead to *stage fright*. Hence, a small hand-held, voice-activated recorder was pointed out initially, then discreetly placed between the

interviewee and investigator. The operational condition of the device was checked while preloading the coded cassette and spare batteries and tapes were always present.

Field and Morse (1985) are critical of the 'one-off' interview for not being able to establish a relationship that may lead to *avoiding awkward questions*. Since patients' medical conditions were never entered into (condition 5 of the ethics committee) and the author's clinical background was declared to the interviewee at the outset, few problems arose.

The use of a semi-structured interview ensured that there was reasonable attention paid to the sequencing of questions, thus avoiding *jumping*. This requires the interviewer to actively listen and ensure the correct meaning of the response. The fact that the researcher was also a radiographer, as already referred to, brought advantages and disadvantages to the study.

Developing the technique of divorcing the two interactional roles did become easier over time and the fact that the interviewer was not a regular member of staff at the departments investigated helped in this matter of what Field and Morse (1985) call *teaching and preaching*.

Finally, any statements that may have reflected an element of patient *counselling* were strictly avoided and initial analysis of transcripts ensured that something close to objectivity, since post-positivism suggests that true objectivity is a myth, was maintained throughout the data collection period.

Initially, only in-patients were considered due to ease of access, but many were deemed too 'poorly' by the radiographers and thus excluded immediately from the study. If deemed potentially appropriate, the researcher approached the medical team charged with the patient's care. Although the reasons for this were obvious in protecting 'vulnerable patients' and a strict condition of the ethics committee, it was in reality a long and onerous task. It often ended in failure to contact the medical team or the patients returning to the ward un-interviewed. In both cases valuable patient data was lost. This is a common difficulty when using interviews since 'even when access is gained, participation does not necessarily follow' (Grbich, 1999, p.88).

All the interviews were audio-taped with full consent of the patient, and the tapes were transcribed a short time after the interview. It was essential that the researcher explored the patient's experience and feelings related to the actual procedure and not their concerns about their own medical condition. At times the two were impossible to divorce from each other (Murphy, 2001). If their medical condition was mentioned, the focus of the interview had to be altered and this was problematic from time to time.

Interview questions

It is suggested that the first few interviews are kept very broad in order to let the participants tell their stories (Jones, 1994) and to let the theory evolve. The researcher therefore started out with a very general idea of what he wanted to know (Murphy et al, 1998). The following broad considerations formed the initial framework for the patient interviews:

1. The existence of preconceptions about high technology imaging equipment.
2. Patient preparation (psychologically) and information given for the scan.

3. The reality of the experience.
4. Understanding and communication.
5. Knowledge of the imaging technology.
6. Recommendations.

The framework for the semi-structured patient interviews is seen in Appendix 4.

The wording of the questions changed as the study was continually refined where appropriate, and this is justified as the report evolves. The researcher was aware that the open structure often led to the wording or the emphasis changing slightly between interviews due to different interactions. However, most research questions do not come perfectly structured first time, no matter how experienced the researcher is (Miles and Huberman, 1994). The wording of questions for all interviews was guided by Patton (1990) and is summarised overleaf.

Table 3.0 Guide for Interview Questions. (Adapted from Patton, 1990)		
<u>Factors (Patton, 1990)</u>	<u>Consequences</u>	<u>Action</u>
Dichotomous questions	Yes or no answers limit qualitative data collection	Non used, participants encouraged to talk
Leading questions	Respondents give answer they think is required. Distorts 'truth' and introduces bias.	As far as possible, avoid leading questions.
Do not presuppose which dimensions of feelings or thought will be salient.	May restrict the possible range of descriptions or emotions used by the interviewee.	Questions formatted around what do you feel? Think, sense about Pictures and symbols introduced to second patient interviews.
Multiple questions	Create confusion and tension	Focus on singular questions
Too many descriptors in the question	Does not encourage interviewee to describe themes, images, etc in their own words	Introduced analogies into second patient interviews.
Limit the number of 'why' questions.	Assume a cause and effect leading to inferences. Respondent usually only answers from one point of view.	Limited in patient interviews but used in radiographer interviews to determine if the response level was technological or patient care.
Avoid presuppositions such as 'what was the worst part of the scan?'	Presupposition is that there was a worst part, it may have all been enjoyable.	Analyse wording for presuppositions.
Role play and simulation questions	Provide a context for responding and enrich data	Employed in radiographer interviews to compare with shadowed data
Prefatory and summarising data	Hint at question to be asked before delivering the question, commands a richer response. Interviewee knows the interviewer is listening and the interpretation is correct	Used as part of interview process.

Radiographer interview questions

The questions that led this stage of the study were developed from shadowed patient data and an increasing literature review that pointed towards a holistic approach towards the understanding of humanistic interactions within the radiology department. The questions were more advanced and structured than the first patient questions since the inductive study had progressed in parallel with the researcher's opinions (Reissman, 2002). The questions were once again filtered through Patton's (1990) summary (table 3.0) and conceptualised into the following questions where each one is now justified:

1. Can you please outline your career to date?

This question addressed the point raised by Orlikowski, 1992 (Figure 2.2) that imaging technology influenced radiographers' career development over time. In addition the experience of each radiographer in CT/MR was recorded.

2. Can you explain to me why you chose M.R / C.T?

In this question the aim was to ascertain the reason why radiographers worked in these areas. The intentional use of the 'why question' (Patton, 1990) would reveal if the first level of response would have a patient care or technological bias.

3. During your career have you identified role models? I don't want any names or anything, but could you tell me what qualities you admired in these role models?

From the literature Moorhouse (1992) identified socialisation of professionals and the impact on 'self'. This questioned the use of socialisation in high-technology imaging and tried to acquire information regarding what personal and professional qualities are desirable.

4. In your opinion has technological development enhanced the status of radiographers?

In this question, the respondents were asked to reflect on the impact that technology has had upon the profession. Status, in the medical arena, both from the medical and patient perspective was very prominent in the literature.

5. In your opinion has technological development been to the detriment of radiographers?

In this question the respondents were asked once again to reflect on the impact that technology has had upon the profession.

6. Can you tell me how you think patients' perceive your role in C.T/M.R?

This question asked for opinions and self-reflection. It also explored roles. For example, did the radiographers feel they had just one role and how did this compare with the opinions of the patients themselves?

7. Does the physical barrier between you and the patient cause any problems?

Early patient interviews suggested that the physical barrier may be problematic and is supported by a small body of the literature (Mc Kenna Adler, 1990, O'Connor and Cotter, 1998). Would the radiographers have the same view?

8. How would you explain your occupation to non-radiographers?

This question focussed on 'self' and how the radiographers saw themselves in lay terms.

9. Do you feel the whole process is in any way impersonal?

This question focussed on the emerging theory and was designed to determine if the views corresponded with those of the patients.

10. I have shown patients a picture of the scanner to get their first reactions of what it symbolises to them. What types of things do you think they have said?

The second phase of patient interviews introduced this question and is discussed in full in data analysis (section VI). In order to gain some richer shadowed data it was also incorporated into the radiographer interviews.

11. I would like to hear from you what factors influence patients' knowledge and beliefs?

Initial analysis and literature suggested that patients were influenced by a wide variety of factors, once again it was hoped that this information would complement that being acquired.

12. Can you tell me of any particular stories?

Although some of the patient beliefs and knowledge were being revealed in the early data, since these radiographers had prolonged involvement (Patton, 1990) in the environment they were therefore likely to be able to make a significant contribution towards this section of the data.

13. Do you feel there is any difference between males and females?

This question tested a very early suggestion that there may be a difference in the coping strategies of males as opposed to females in this study. It was however noted that generalisations could not be made due to the nature of the study.

14. Patient use terms for the technology such as coffin, tunnel etc. do you know of any more?

Once again it was hoped this information would enrich the data being collected, maybe add new terms or refute findings from the patient interviews.

15. Have you had a scan yourself? Can you tell me about it please?

If there was a positive answer to this question, further questions from the radiographers' experiences would follow.

Radiographers' Experiences Interviews

As will be discussed later, it became apparent that some radiographers would not relish the experience of an MR scan in particular. This evidence started to emerge from the initial interviews and it was felt it needed to be followed up with further theoretical sampling of radiographers 'in order to explore aspects of the developing conclusions' (Abbott and Sapsford, 1998, p.127).

However, extreme or deviant case sampling³ would give the researcher cases from which he could learn the most since they were likely to be rich in information simply because

³ Extreme case sampling considers enlightening cases, such as outstanding success or notable failures. (Patton, 1990)

they are unusual or special in some way (Patton, 1990). The researcher wanted to identify radiographers who had disliked the experience of a high technology scan when they themselves were patients, or had an MR scan for research purposes, which is common practice in most units since there is no risk from ionising radiation.

An advert was therefore placed in the professional journal *Synergy* requesting contact with radiographers who wanted to talk about their experiences. It was emphasised that any medical conditions of the respondent would not be discussed (Appendix 5). After a very slow response, eventually 8 radiographers were interviewed by telephone. Another 2 'extreme cases' (Patton, 1990) came forward but did not proceed to interview. One radiographer wrote down their experiences on paper and did not wish to be interviewed, while the remaining radiographer could not be contacted again at the address given. The written experiences were documented in the research memo book.

Telephone Interviews

With no experience of telephone interviewing and little guidance available in the literature, the investigator set about the interview process. Some people prefer this type of interaction and feel more comfortable than a 'face to face' situation (Grich, 1999). Subjects can maintain a degree of anonymity (Silverman, 2001) and although all interviewees were radiographers, none were known to the researcher and they were spread over a large geographical area. The advantages of this sample for the researcher were immediately obvious: no travelling, inexpensive and less time-consuming. However, the reality was in fact very different. Busy professional people are not easy to access, even with appointment times. Some wanted to be interviewed straight away, an option that was never possible due to other commitments on the researcher and the

availability of equipment. The setting varied between a quiet office to a house being renovated and the researcher had no control over the interruptions at the interviewee end, of which there were many. In addition, many authors warn of the absence of non-verbal communication (Grbich, 1999; Patton, 1990). Thus information may become misleading or distorted. A speaker-phone was used with the same tape recorder and several practice sessions followed in order to develop proficiency in operating the speaker-phone and conducting what Lincoln and Guba (1985) call 'talk turn.' By this it is meant that the researcher must lead and indicate when the respondent should answer, in order to avoid simultaneous speech and in order for the audible speaker to be 'switched on.'

The basic questions, as with the other face to face interviews, were compared with Table 3.0 for wording guidance and the following broad information was requested:

1. Brief career history and experience in the modality of concern.
2. Symbolic significance of a scanner (from phase 2 of the patient interviews).
3. Experiences of having a scan.
4. Patients' perceptions of their role.

These interviews were much more open in structure. The researcher was more experienced and aware of emerging concepts and since, in addition, the radiographers, being self-selected, had a story to tell, these interviews were likely to be rich in data (Patton, 1990).

Data Handling

The secure handling of research data is of paramount importance in any study, but especially in qualitative inquiry. Smaller numbers in their 'raw state' in the transcripts can make participants easier to identify, cause embarrassment or even harm to an

individual or organisation (Murphy et al, 1998). Unfortunately, simply signing a consent paper does not guarantee anonymity, protection or confidentiality (Munhall, 1993). The researcher was therefore careful that:

Identities, locations of individuals and places are concealed in published results, data collected are held in anonymised form and all data are kept securely confidential.

(Blumer, 1982, p.225)

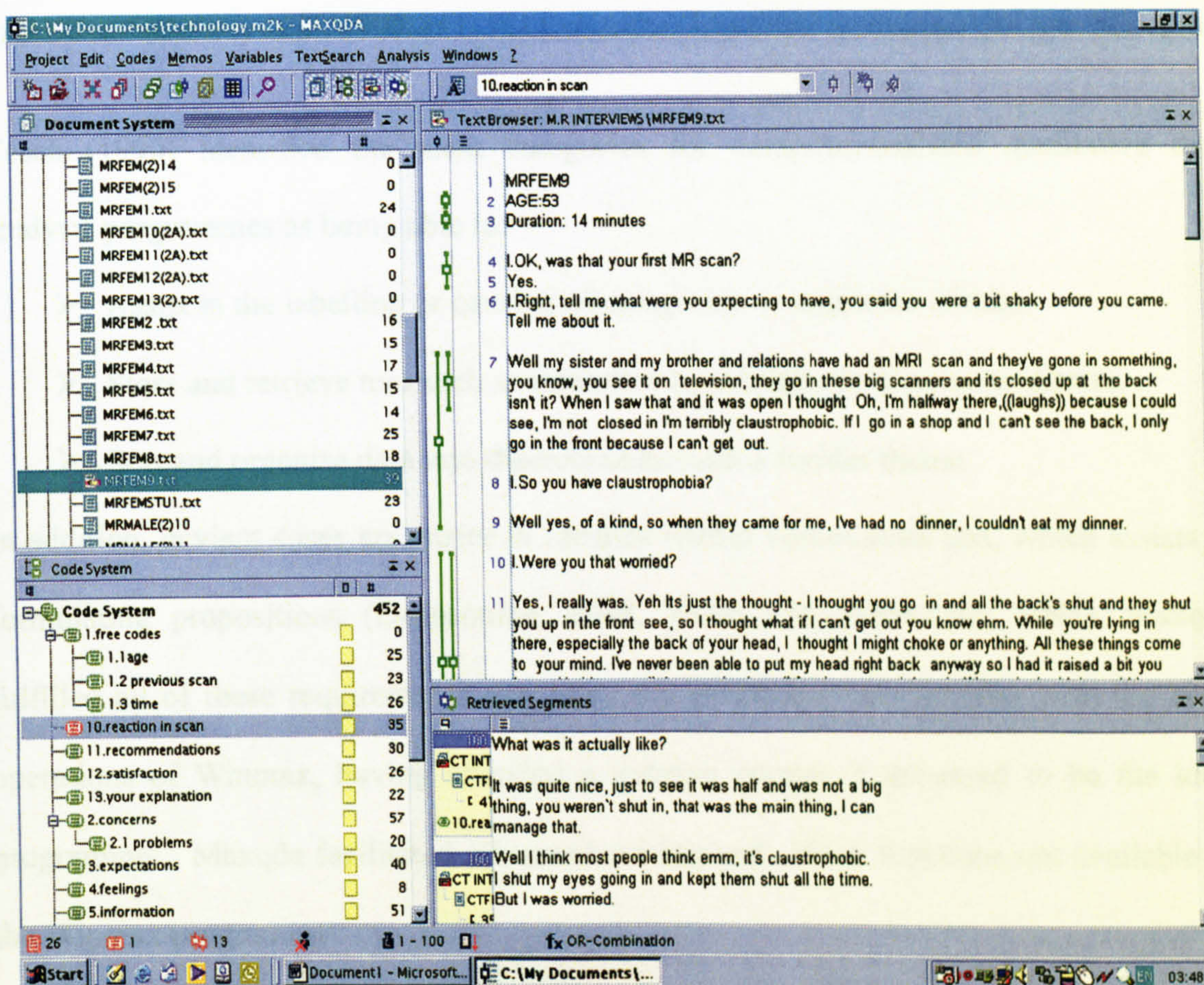
As mentioned previously the single most likely source of harm in social science inquiry is the disclosure of personal details and knowledge (Munhall, 1993). Thus in order to adhere to the principles of anonymity, patients or radiographers were not identified by name or location and all interview tapes were indexed as in Figure 3.1. Once transcribed, the tapes were locked in a secure location and will be destroyed at the end of the research. The tapes were transcribed verbatim by the researcher as soon after the interview as possible. Although a very small amount of secretarial support was provided by the university department, which saved the researcher a great deal of time, the researcher found it was important to transcribe as many tapes as possible himself. Although the process was tedious at times, the researcher was sensitive to the nature of the data (Patton, 1990) and if the transcription was done by the secretary, the tape was still audited many times in order for the researcher to identify non-verbal cues or meaningful words perhaps not evident to the secretary. This also enabled any field notes to be incorporated in addition to reflection on coding and possible themes, and since the whole process is iterative this assisted in the developing theory (Polgar and Thomas, 1995).

Computer Assisted Qualitative Analysis

Data handling and analysis was facilitated by a software computer programme Max Qualitative Data Analysis (Maxqda) (Verbi, 2001). Maxqda is an upgrade from the more

commonly known Winmax programme. The use of computer-assisted qualitative data analysis has grown at a tremendous rate in recent years (Miles and Huberman, 1994) but it is not universally accepted, with suggestions that it may corrupt data (Strauss and Corbin, 1990), that it can take the researcher away from the data (Carney et al, 1997), or that it is too rigid and constrains reflexivity (Morison and Moir, 1998). However, many of the mechanistic functions required in textual handling, and to an extent subsequent analysis, can be done on basic word processors. The software programme is shown below.

Figure 3.3 Working Desktop appearance of Maxqda



Explanation of Figure 3.3

The desktop appearance of the programme is shown with four distinct working areas of document system (top left), code system (bottom left), text browser (top right) and coded segments (bottom right). Different sequences of data could be viewed according to the researcher's preference. Figure 3.3 illustrates the text and retrieved segments with respect to 'reaction in the scanner' (code 10) for all interviews selected, whilst simultaneously displaying the full transcript for interviewee MRFEM9. The issues of data analysis using Maxqda are discussed later. It was felt that the enormous benefits strongly outweighed any possible disadvantages, and so mindful of the need to 'stay close to the data' (Carney et al, 1997, p.1) the researcher imported the transcripts into Maxqda.

Tesch (1990) identified the main categories for computer-assisted qualitative data analysis programmes as being able to:

- Assist in the labelling or naming of categories or segments of data.
- Store and retrieve text such as interview transcripts, field notes or diaries.
- Sort and organise data into discrete units with a similar theme.

In addition, deviant cases are easier to identify within voluminous text, which assists in formulating propositions (Denscombe, 1998, Miles and Huberman, 1994). Maxqda fulfilled all of these requirements and since the researcher was familiar with the basic operations of Winmax, having attended a training course, it appeared to be the ideal programme. Maxqda facilitated advanced editing and search functions not available on the Winmax programme.

Data Analysis (Section VI)

There appear to be almost as many qualitative data analysis procedures as there are approaches to research (Marshall and Rossman, 1995; Robson, 1993; Patton, 1990).

The inductive style meant that some form of analysis commenced at the start of the study in order to generate codes and themes (Patton, 1990). In the absence of previous studies in this area, the researcher was engaged with continuous interaction with the data so that a simple descriptive framework could guide the study.

The fact there is no 'one way' to analyse the data exposed another major ambiguity about the research process, but as a starting point Robson (1993) led the way with a summary of analysis derived from texts of Delamont, (1992); Miles and Huberman, (1994); Lofland and Lofland, (1984); Tesch, (1990). This is further adapted to this study in Figure 3.4 and is illustrated overleaf.

Figure 3.4 Basic Rules for Dealing with Qualitative Data
Adapted from Robson (1993, p.377)

- 1. Analysis of some form should start as soon as data is collected.**
- 2. Index all data immediately.**
- 3. Generate themes, categories, and codes from the start, include rather than exclude at this stage.**
- 4. Reflect on the data to avoid mechanistic analysis using memo for conceptualisation.**
- 5. File the data, be prepared to re-sort and play with the data.**
- 6. There is 'no one right way,' play with the data.**
- 7. Take the data apart then reassemble to form a consolidated picture by constant comparison.**

Explanation of Figure 3.4

Points one to seven acted as a guide and were constantly referred to by the researcher. Early analysis, reflection and 'playing with the data' (points 1, 4 and 6 respectively) were key elements of the methodology. Rule number four was adhered to with the use of a research journal, in addition to the memos created within Maxqda. The basic rules are also complementary to Figure 3.2 (Interactive model, Miles and Huberman, 1994) discussed earlier, further it ensures the iterative process. Data analysis commenced after the first few patient interviews and continued in parallel with further data collection so that each process informed the other (Porter, 1996).

The transcripts were indexed (Figure 3.1) to guarantee confidentiality and listed within Maxqda (in text groups) under MR interviews, CT interviews, CT and MR interviews, radiographers, and radiographers' experiences. In addition, field notes and a research diary were added to this indexing system, since the researcher's initial thoughts and ideas should be recorded in the form of theoretical notes (Smith, 1997), although at a later stage, the field notes and reflection were written manually in a book for convenience.

Coding the data

Coding commenced immediately (Robson, 1993) with only primitive temporary codes being assigned to the first few interviews. Formal coding was undertaken, up to and including the first twenty-five interviews (14 CT and 11 MR). This was *phase one* of the patient data analysis. Provisional analysis of phase one data subsequently influenced the remaining patient interviews and radiographer interviews.

Open coding of the data involved each word, line or paragraph being examined in an 'attempt to encapsulate the participants' meaning' (Clarke, 1999, p.532). A list of codes were recorded in the code system of Maxqda. Each interview was analysed by open coding (Clarke, 1999) these were descriptive codes and they 'entailed little interpretation,' since they were in fact only labelling a segment of text (Miles and Huberman, 1994, p.57), although some would develop into pattern codes at a later stage. This method is described as 'thematic content analysis' (Burnard, 1991, p.461). The codes for the interviews were presented with a short abstract of salient points, this reduces the data to a 'contact summary sheet' (Miles and Huberman, 1994, p.54) for ease of analysis. Once several codes had been derived, (and the policy at this stage is one of inclusion rather than exclusion (Tesch, 1990), a form of constant comparison adapted

from Glaser and Strauss (1967) related codes into categories. Marshall and Rossman (1995) suggest that categories should be internally consistent but distinct from one another. This second stage of coding is also known as axial coding (Clarke, 1999).

The use of analytical memos were added, and although rudimentary in the early stages, they served as a useful reminder at a later phase. Memos can be listed, searched and retrieved with the text segment in the software programme. From the data a tentative theoretical framework started to emerge and by working in a sequential manner, the validity of the coding framework was increased and time was allocated for a degree of reflectivity (Miles and Huberman, 1994).

Coding in this manner enabled the process to be an heuristic tool, where discovery developed on two emerging patterns (Patton, 1990). The first was what Patton (1990) calls *indigenous concepts*, these are centred on key phrases and terms used by the participants which are common in the data. They may be created by the participants and lead to refinement at a later stage. An example of this was the fact that many patients referred to the 'constant closing of eyes inside the scanner.'

Secondly, *sensitizing concepts* are concepts the researcher brings to the data and has been referred to as theoretical sensitivity earlier in the study. However, more specifically here, Patton (1990) suggests that these concepts have origins in social science theory, the literature, and in this case the professional experience of the investigator. These concepts give direction and reference (Blumer, 1969) to the study. For example Symbolic Interactionism, although being used as a perspective, has at its heart shared meaning and communication. By studying its basic tenets, not just from the viewpoint of the patients

but also the radiographers, understanding of the holistic medical imaging interaction should develop. However, caution must also be expressed since:

Concepts are never a substitute for direct experience, the concepts are used to make sense of and present data, this should not however be a forceful attempt to prove applicability and validity of a concept, rather the data itself should reveal the nature of the people and the world studied.

(Patton, 1990, p.393)

Mapping the content analysis

Building upon the foundations of Figure 3.2 (interactive model, Miles and Huberman, 1994) the process of content analysis required further development. Concepts were being derived from the iterative model, but the role of qualitative data analysis software or the process of 'thinking and reflexivity,' so critical in an inductive study was not evident in the model.

Seidel (1998), while recognising the diversification in the analysis of data, argues that content analysis is based on three basic principles; noticing, collecting, and thinking, Figure 3.5 (overleaf).

Figure 3.5 A Model of Qualitative Data Analysis (Seidel, 1998, p.11)

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Please refer to the original text to see this material.

Explanation of Figure 3.5

Seidel's model (1994) facilitates coding and concept generation but avoids intensive theory development at this stage. The figure should be analysed from the top left hand corner by following the thicker bold arrows in the first instance. By looking for 'patterns and patterns among patterns' (Seidel, 1998), Maxqda permits the researcher to view codes alongside text and retrieve the coded segments directly from the text, so (like Ethnograph) Maxqda is particularly well suited to this model. Figure 3.5 shows this more sophisticated model, where the thicker bold arrows represent noticing, collecting and thinking and the square boxes portray the role of the Maxqda software in importing, filing, coding and ability to search for coded segments. The rounded box represents 'discoveries' or concepts while finally, the lighter longer arrows demonstrate the iterative and recursive aspects of analysis.

Having looked at how the singular concepts can be used in analysis, the next level of investigation is that of typologies. Typologies are classification systems (Patton, 1990) and are indicated on Seidel's model (Figure 3.5) as hierarchical categories that provide the 'emic' approach. Although the process of analytic induction addresses many of the questions of rigour, the researcher was concerned that there was an element of reductionism 'which may destroy the totality of the philosophy as expressed by the interviewee' (Wiseman, 1979, p.278). Wiseman (1979) suggests this is best avoided by working back and forth between the parts and the whole of the data. By following this guidance and considering two alternative perspectives for illuminating the data, the situation was avoided whereby the researcher finds the codes but loses the phenomenon (Seidel, 1998).

To report on the concepts and the theory that might develop would have been a useful contribution, but the sensitising and indigenous concepts pointed towards a more creative analysis to, as Frake expresses it; understand 'how people construe their world of experience from the way they talk about it' (in Patton, 1990, p. 394)

Indigenous typologies require analysis of the verbal categories used by the participants, that is the analysis of indigenous concepts. Themes, use of language and behavioural patterns reported by the participants themselves are critical in making sense of qualitative data. In addition, analyst-constructed typologies were also used, as Patton (1990) states, 'the second task of induction then is for the analyst to look for patterns, categories, and themes for which a typology can be constructed by the analyst to elucidate findings' (p.398).

Using indigenous and exogenous categories, a framework was developed that linked the codes typologically as suggested by Pfaffenberger (1988). In order to find out how accurate these constructs may be, the researcher presented them to some of the participants by incorporating some of them into the interview schedule. The typology of *non-persons* (Davis, 1959) (discussed in the literature review) is the most obvious example in this study. Radiographers were asked if they felt they had the characteristics associated with non-persons, without using the actual term or any further explanation. Lofland (1971) believed that this type of approach brings out:

'The best and most stringent test of observer constructions is their recognizability to the participants themselves. When participants themselves say, "Yes, that is there, I'd simply never noticed it before," the observer can be reasonably confident that he has tapped into extant patterns of participation.'

Lofland (1971, p.34)

The process of peer debriefing and member checks also gave further credibility in confirming the presence of the typology.

Making Meaning: The Creative Component in Qualitative Research

The need to consider alternative perspectives within the analysis has been a recurrent theme within the last few chapters. A comprehensive study of qualitative methods demonstrates that there is a difference between factually reported, dry results and the novel insights that occur in elegant qualitative studies, but little is ever documented about how this 'elegance' occurs (Hunter et al, 2002). Morse (1994) speaks of making a creative leap, while Sandelowski (1994) emphasises the importance of working with the whole picture, by this she presumably means the whole and not part of the data (Wiseman, 1979).

The ladder towards creativity has four steps according to Amabile and Tighe (in Hunter et al, 2002) not unlike introduction, literature review and verification in a research study. These authors prefer the terms insight, saturation and verification, but with one critical addition; that of incubation. Strategies for creativity ‘take time and require incubation for new ideas to percolate’ (Hunter et al, 2002, p.396). Thus in order to try and emulate a degree of creativity, analysis of the data began immediately and considerable time was spent in the immersion of the results. In supplementing this approach the use of alternative perspectives and imaginative ways of illuminating the data were incorporated into the study. It became apparent, only after a period for analysis and reflection, that in order to understand the interaction with imaging technology the task could not be a linear one, but had to be considered from several different perspectives and involving some creative analysis (Hunter et al, 2002). The combination of a traditional and creative process may reveal a plethora of data, the richness of which may get lost in the process of coding, categorising (Hunter et al, 2002) and identifying typologies.

Symbolic Interactionism

The philosophy of this perspective has been outlined in detail earlier and tries to make meaning of one’s own world and perspectives. By using Symbolic Interactionism the researcher hoped to recreate an environment that expressed ‘self’ and the meaning of technology as a symbol, rather than focussing on cause and effect such as anxiety or stress. By doing this it was hoped the research would yield different results (Hunter et al, 2002) that reflected the dynamic nature of the radiological encounter.

Maps and Pictorial Representation

The use of maps to demonstrate points is a common feature in qualitative research (Patton, 1990), and they enabled the researcher to describe events and interactions by layering various models of analysis with Symbolic Interaction theory (Miles and Huberman, 1994). This type of presentation stimulates visual learning and understanding (Hunter et al, 2002).

It has been recognised for some time that photography is a powerful tool that can be used to provoke emotion and stimulate memory (Bender et al, 2001). In order to assess the potential symbolic power of the radiology scanners, each patient was shown a picture of either a CT or MR scanner to elucidate their first feelings and emotions.

Photograph-assisted interviews are an interesting and effective way of generating narrative accounts (Robinson, 2002). This gave additional fluidity to the interview questions and drew an immediate patient response where: 'participants can talk about a picture using their own vocabulary; they are not restricted to scales or other types of closed-ended responses' (Bender et al, 2001, p.783).

Communication through Metaphors

Once again early analysis suggested that the messages coming back from the initial patient interviews might not have been truly captured by a traditional approach. The use of metaphors can bring more meaning to the data (Hunter, et al, 2002). A metaphor uses figurative language to suggest a likeness to, or an analogy of, an idea (Burns and Grove, 1995), providing a strong visual image. It was also felt by the researcher that the metaphors were a more powerful reflection (Hunter et al, 2002) of the feelings and voices

of the participants. The *cautious* use of metaphors is however advocated by Denzin (1978) who says that, although they can reveal special events and meaning, the metaphor should serve the data and not vice versa. Metaphors do, however, have an immense and critical role in the development of theory. People use them to make sense of their own experiences (Miles and Huberman, 1994).

Since the metaphor is:

Halfway from the empirical facts to the conceptual significance of those facts. [In considering metaphors] ..you are shifting from facts to processes, and these processes are likely to account for the phenomenon being studied at the most inferential level.

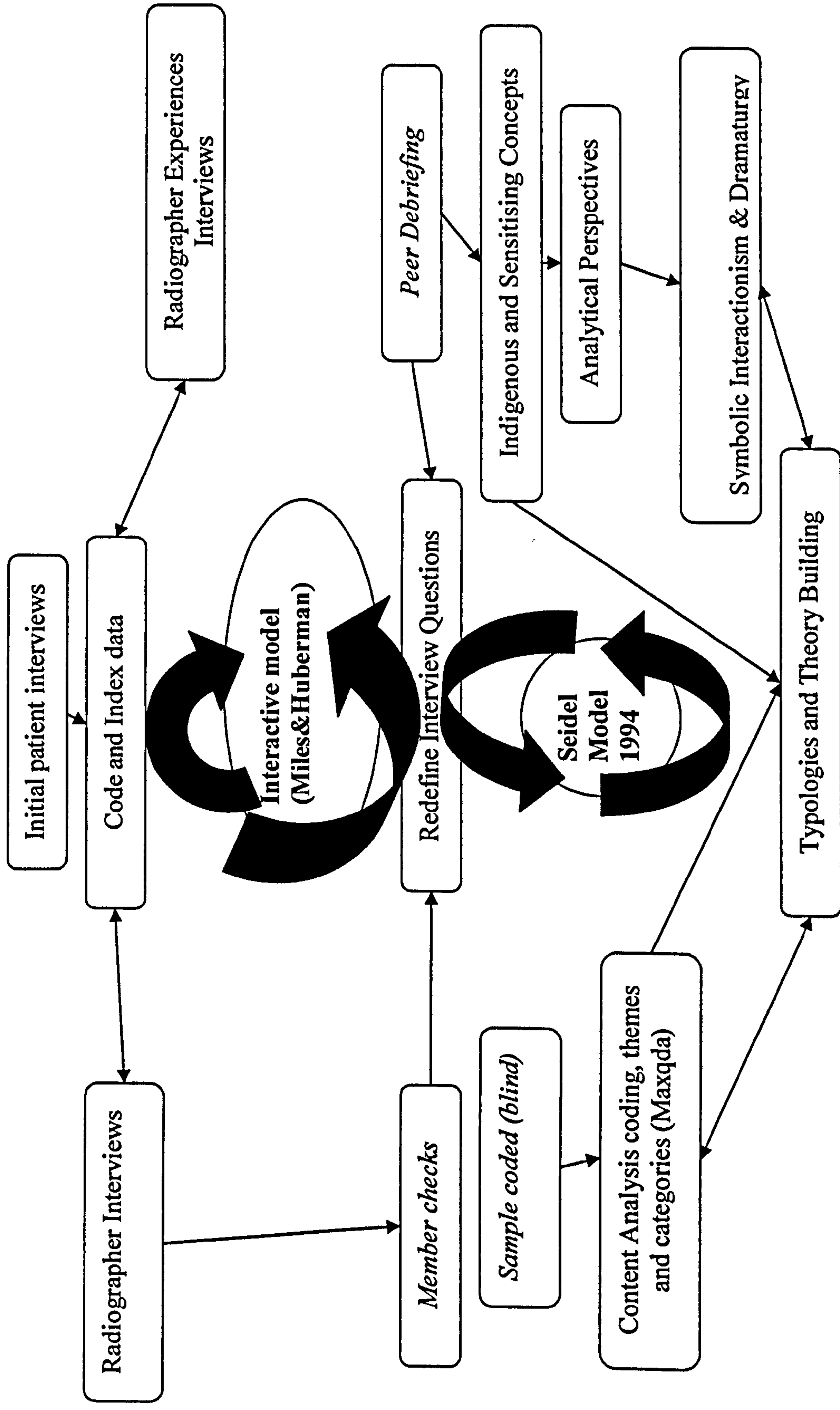
(Miles and Huberman, 1994, p.250)

Hunter et al (2002) suggests that creativity also requires a shift, not literally from facts to processes, but from the organised, left side of the brain, to the interpretive, intuitive right side (Sandelowski, 1994).

Dramaturgical Analysis

Perhaps one of the most creative aspects of the analysis is Critical Dramaturgy. The assumptions that underpin this analytical perspective were fully discussed in the literature review chapter. However, it is recognised by others outside of the field of sociology, that placing the data into a play or drama can assist in trying to understand the phenomenon (Hunter et al, 2002). This perspective, which views the whole picture as a drama (Goffman, 1959) with all its unfolding scenes and acts, is the final part of the analysis that attempts to gain novel insight into the interaction.

Figure 3.6 Mapping the Methodological Framework



Explanation of Figure 3.6

Figure 3.6 *Mapping the Methodological Framework*, illustrates how the whole inductive process evolved around the two iterative models. The initial patient interviews were indexed and coded, whilst simultaneously providing guidance for the other phases (radiographer and radiographer experiences) of interviews. This was brought about within the interactive model (Miles and Huberman). Once redefined the interviews were analysed using Seidel's model, this facilitated noticing, collecting and thinking. Triangulation of analysis by thematic analysis (on the left of the diagram) and alternative perspectives (on the right of the diagram) led ultimately towards theory building. Rigour was maintained throughout, as illustrated in italics, and was an integral part of the methodological framework. When considered together, the framework shows the development from models, to concepts and finally to theory.

CHAPTER 4

PATIENT INTERVIEW RESULTS

Chapter Overview

A total of forty-nine patient interviews were conducted over the course of the study, immediately following CT or MR scans. This chapter explores the findings of the study by mainly reporting the 'emic perspective,' in addition to reducing and displaying the data (Miles and Huberman, 1994). The inductive nature of the methodological models employed shows how the initial results were a powerful influence on the future direction of the investigation. The indigenous concepts that emerge are further developed, alongside the sensitising concepts (Patton, 1990), in order to elucidate typologies and build theory in subsequent chapters.

The initial part of this chapter gives some consideration to unexpected difficulties in the interview process. They are documented at this stage since they had a significant impact on the early patient interviews.

The initial interviews represent *phase one* of the study and are divided into four sections.

All sections consider the results from the patient interviews in the following manner:

- Reporting on each interview with contact summary sheets
- Axial coding of results
- Summary of data

Section one identifies the emergent codes and documents the results from the CT interviews. The second section follows a similar pattern by reporting on the results from the MR interviews. Section three leads into *phase two* of the study, the coding framework is redefined at this point, before the contact summary sheets for the CT (phase two) interviews, axial coding and summary are displayed. The final section in this chapter, section four, reports on the MR (phase two) results in a similar format.

Initial difficulties

Some patients thought the researcher was there to listen to complaints (these were not numerous but did include problems related to the hospital waiting room or the ward) and many of these were not necessarily relevant to this study. Conversely, several interviewees were reluctant to divulge information for fear that others might suffer reprisals as a consequence.

To the researcher, the nature of the study was clear. It was clear during the process of acquiring informed consent, and it was written on the patient information sheet. However, perhaps this was an assumption in the mind of the novice researcher, and certainly the problems encountered strengthen the argument for research governance in ensuring that the purpose of the study is understood by all concerned (Burgess, 1984, Patton, 1990). Despite the 'filtering system' in place before interviewing (which included radiographers,

medical teams, and ultimately the researcher) the fact that some patients were 'confused' or 'ill' was sometimes only apparent once the interview had commenced, leaving the interviewer with some difficult decisions and responsibility for the care of the patient.

Section One (Phase One). CT Results

The first phase of interviews were disappointingly short in duration because many interviewees were very satisfied with the imaging experience and therefore had nothing more to add. This was very pleasing for the profession but, to the novice researcher, it appeared that there was little in terms of data to justify the study in the first few interviews. In addition, when considered retrospectively, some points could have been explored further. However, no themes were preconceived and since the research was in its infancy it was impossible to identify what the salient points would be. This was to be a recurrent finding for most of the interviews in this first phase. Although the interviews were of short duration, the data were still very relevant and additional patient interviews would, it was hoped, still enable indigenous themes to be saturated (Patton, 1990).

Identification of Codes

The initial codes were derived from reading, and then rereading, the data; this facilitated the noticing, thinking and further collecting of data as outlined in Seidel's model (Figure 3.5). 'It also enabled the reader to enter into the

interviewees' frame of reference' (Burnard, 1991, p.462). This process either produced additional codes, sub-codes within codes, or led to the merging and reduction of certain codes.

A memo was attached to each code and sub-code as they were developed in order to define its use. This period of incubation (Hunter et al, 2002) with the data served as an effective method in developing codes and making initial considerations. The theoretical thoughts of the investigator (at that time) taken from the research diary are also documented (*italics*) as suggested by Smith (1997) to assist in making the research trial more transparent.

Code 1.0 Free codes

Demographic details of the patient's age, the duration of the interview and whether or not they had previous experiences of CT or MR imaging scans.

Code 2.0 Concerns

Anything that worried the patient before, during, or after the scan. It was identified at an early stage that problems (coded 2.1) could be merged or listed as a subsection of concerns. They are however identified as separate codes for many of the initial interviews. A complete list of codes is illustrated in Appendix 6.

Code 3.0 Expectations

These are the thoughts of the patient and express what they were expecting to happen.

Code 4.0 Feelings

The full range of emotions including anger, fear, nervousness, enjoyment.

Code 5.0 Information

The amount of information received by the patient, and the value of it.

Code 6.0 Knowledge

The knowledge that the patient has of the scan/procedure, in particular the technology.

Code 7.0 Misconceptions

Any thoughts or ideas that can be considered to be misconceptions about any part of the imaging process.

Code 8.0 No problems

Where the interviewee expresses no concerns or problems with the imaging experience.

Code 9.0 Other radiology procedures

Reference to any other radiological investigation or piece of high technology imaging equipment.

Code 10.0 Reaction in scanner

This relates to how the patient actually felt when inside the scanner. It excludes everything before and everything after the scan.

Code 11.0 Recommendations

Any suggestions that may improve the whole experience for the future patients.

Code 12.0 Satisfaction

Simply, the level of satisfaction of the patient.

Code 13.0 Explanation

How the patient would describe the scan to someone else coming for the same procedure. These should be in lay terms.

Contact Summary Sheets (Miles and Huberman, 1994) (n =14)

The contact summary sheets provided a report for each interview. This enabled each individual voice or the 'emic perspective' to be heard, together with comment on the interview process for each interviewee. This was the first stage of data reduction and display (Miles and Huberman, 1994). CT interviews were considered in the first instance and then analysis was considered across the interviews, that is, axial coding was employed (Clarke, 1999) to discover emergent concepts. Finally, this was followed by a précis of the imaging modality. The interviews performed on patients in MR are then analysed in an identical manner. Some of the most interesting codes (*in italics*) are considered within each contact sheet. The complete coding for each interview is recorded in the margin (Strauss and Corbin, 1990) of the full interview transcripts (Appendix 7).

CTFEM1

The first interview took place in the CT department on a female in-patient aged 42. The imaging procedure did not appear to have presented any *problems* and she was aware of what to *expect* from previous experience. There was however some confusion with an MR scan and many assumptions were made. This lady had *expectations* of an MR scan. She was not scared, but wary of what she called the 'tunnel.' Upon seeing the CT scanner she was somewhat relieved. It was pleasing to note that this patient appeared to be more *concerned* about the drink and injection (contrast agents) than the technology. A good level of *knowledge* was found with the terms such as 'x-rays' and 'deeper look into' being expressed.

CTFEM2

This interview demonstrated another *satisfied* in-patient with few *problems*. Interestingly, this female aged 65, who had not had a scan before, or received an *explanation* about what to *expect*, clearly thought she was having an MR scan. The information supplied by other people told her that she would be claustrophobic (lines 22-23). Although initially she claimed not to have been told about the purpose of the intravenous injection, subsequent responses revealed a very good 'lay' explanation of contrast agents. She did not know what to *expect*; she could describe the procedure, but did not name it, and she referred to the term 'tunnel,' more commonly associated with MR. This lady was also *expecting* a big 'tunnel,' this presumably is the MR scanner and the assumption was made that this would make her claustrophobic by being shut

in. Her *reaction in the scanner* was one of enjoyment, and not like she had imagined.

CTFEM3

This represented the first experience of a CT scan for this 56 year old female patient. She was given descriptions of what to *expect* from two close family members, although one examination was clearly MR. Given her medical problems, which she kept introducing, she was understandably more *concerned* with the outcome of the procedure than the process. Her interaction with the radiographers, although the term is not used, was a very positive one, and she was reassured by their explanations.

She had *expected* the same procedure, or very similar to, the experiences of her daughter and mother who both seemed to have had unpleasant episodes. She was not worried by the technology, describing it as 'huge machines' (line 16). Once *inside the scanner* she expressed *no concerns*, she shut her eyes throughout the whole procedure, and was focussed on her medical condition. Her *Knowledge* confirmed a very good level of understanding with key words such as 'deep x-rays,' 'layers,' and '3 dimensional,' being used.

CTFEM4

The researcher considered this to be a difficult interview to conduct. The interviewee, a female nurse, had previous experience of a CT scan and tended to persistently shift the focus of the interview towards her medical condition. The researcher attempted to deal with this, and this is recorded in the field

notes. As a result, one or two questions were not asked by the researcher and inevitably some data was lost. This lady demonstrated a great deal of empathy for others undergoing a scan, and this was beginning to emerge as a common theme. She had no problems of note but found the automated breathing instructions to be a 'bit strange' (line 13). She remained 'loyal' to the staff defending them at every opportunity; for instance in terms of *information*, when questioned about not receiving any information on this occasion, she replied 'they knew I had been before, you know, they didn't think that I needed to know' (lines 30-31). Her *explanation* to other patients was very good, perhaps reflecting her nursing background. She had experience of several *other imaging* modalities and a barium enema examination had caused some distress, which is not an uncommon finding (Le Masurier, 1997) for those that have undergone this particular radiological investigation.

CTFEM5

For this 72 year old female, this was her first scan but she was very aware of what to expect. Like the previous interviewees she was *satisfied* with the procedure and expressed *no concerns*. However, the manner in which the *information* was conveyed to her was different and interesting. 'It's like going inside a polo mint' (line 38), the nurse told her. The influence of media was also dominant within the *information* code. This patient requested more details before the scan, but also some human contact with someone to talk to, and perhaps even something to hold being her *recommendations*. Although this was desirable, it was not an *expectation* on her behalf, she said somewhat reluctantly 'there is never the time is there?' (lines 68-69).

CTFEM6

This 54 year-old female patient was fascinated by the technology. She contributed well to the questions, and like the previous interviewee, the method of receiving the *information* was somewhat unconventional. The staff nurse had drawn a picture in the air and told her that it wasn't the MR scan. Again empathy for others was evident within the *problems* code when she said 'If you have no idea then it [CT scanner] can look quite frightening' (lines 61-62). During the scan her *reaction* was one of fascination at how the technology worked. In her *explanation* she clearly appreciated the need to explain the procedure at different 'levels' to accommodate for children and adult understanding. Her *recommendations* were equally interesting with a request for *information* to be given to the extended family. She claimed that other members of the family often wanted to know about the procedures but were reluctant to ask in the first instance.

CTFEM7

Once again difficulties were encountered and the condition of this elderly female caused some concern to the interviewer. For that reason, points were not developed and the patient returned to the ward quickly. *These difficulties in interviewing patients were unexpected findings and the researcher was still developing his interviewing skills to try and cope with these problems. The idea of asking for analogies to simplify the question developed out of this interview. Although not employed with any success in this particular interview, it was introduced into subsequent interviews and with great success in phase two of the patient interviews.* There is a suggestion of a small degree

of isolation and her *reaction in the scanner* was one of fear of falling off the table which she disclosed towards the end of the interview. This lady trusted the medical staff implicitly and did not wish to be *informed* about the procedures.

CTMALE1

This 70 year old male was complimentary about the staff. He quite enjoyed the whole experience, and unlike some of the early female interviewees, he could not identify any *problems* that other patients may experience. He was in fact surprised to learn that others may experience problems when having this examination. He had no *previous experience* of a CT scan or any *information* beforehand. He appeared to take a very philosophical approach (line 30). This male patient *expected* to be inside a ‘tunnel,’ for an unknown duration but that did not worry him. Although he received no *information* from the ward before his scan, another patient offered him a leaflet to read; whether this was for a CT scan or something completely different is not known. His level of *knowledge* was unclear but he did express an interest in the technology. He identified no particular *problems* stating that the procedure was ‘very very easy’ (line 46) and his *reaction* inside the scanner was one of relaxation.

CTMALE2

This represented the 3rd CT scan for this 62 year old male. He used the terms ‘polo mint’ and ‘long tube’ to describe his experiences. Overall, the first procedure was as *expected*, or at least not as bad as he thought it would be. However, he clearly associated the scan with cancer and the CT scanner as the

'cancer scanner' (line 23-25). While no *information* had been given for any of his scans, this assumption had not been challenged. His *reaction in the scanner* was one of compliance and calm, doing his best to keep still throughout the procedure. He would be more than happy to have another scan, being *satisfied* with this and previous experiences. His *knowledge* of the technology was unclear but he was aware that 'different pictures' (line 63) would be taken. However, the *recommendations* offered were very positive and would be reassuring; 'a piece of cake' (line 63) as he would describe it to other patients. Reference was made to closing his eyes; this was becoming an increasingly common finding, but it should be noted that there is no requirement to close one's eyes during the scan.

CTMALE3

This 68 year old male was experiencing his first scan and had received no prior *information*. He was determined to speak about his medical condition despite several attempts to re-focus the direction of the interview. In addition, he appeared a little upset about the lengthy preparation for the scan and the conflicting opinions of the nursing staff as to how long the scan would take. However, the actual procedure presented him with no *problems* and he praised the radiographers, although he didn't identify them with that name, for their explanations. He was *satisfied* and content that his condition was being investigated. His *knowledge* was partly correct with reference towards 'small dimensions' (line 77) and an oblique suggestion of cross sectional imaging (line 83). However, like a previous male patient he was convinced that

ultrasound was the imaging science behind the scan. This interview was curtailed in order to let the patient return to the ward for a long-awaited meal.

CTMALE4

This male patient appeared a little confused and the interviewer had to make the decision whether or not to continue with the interview. It was decided that although some responses were unclear or even contradictory, it still made a useful contribution towards the research and was therefore analysed in the same way. The difficulties arose around the date of previous scans, he claimed to have had one over sixty years ago but CT was not available until the 1980's. Confusion also arose around his repeated mention of the word 'truth.' *The need for ethics committees, informed consent, and medical gatekeepers (Burgess, 1984) was very evident in interviewing this patient.* In retrospect, due to his confused state, the medical team should have declined access to this patient, but nevertheless he provided some interesting comment. He claimed not to have been given any *information* beforehand and therefore *expected* 'sheer panic' (line 46). His *problem* with the technology was that the machine was going to collapse on top of him, and it was assumed that he was claustrophobic with one statement that said; 'with that claustrophobia you don't know where you are' (lines 51-52). His *recommendations* were to explain and talk to the patients before the scan. Less negatively he would also suggest to other patients that the procedure was 'not as bad as it looks' (lines 67-68).

However, just before that comment he made a remarkable statement which summed up his actual fears:

I mean I've had two heart attacks, if that had been my first time in there [CT scanner] this morning, I could have had another I was so frightened.

(lines 60 – 63)

His *Knowledge* of the technology was considered to be reasonable with a correct assumption being made that 2 or 3 dimensional imaging was being performed.

CTMALE5

With 4 or 5 previous CT scans this male interviewee was, not surprisingly, relaxed and fully versed in his *expectations* of the procedure. Although he appeared *knowledgeable* of the technology at first, with references to cross sectional imaging, he later declared that 'it's definitely ultrasonic that, or even microwaves maybe?' (lines 58-59). He expressed a great deal of empathy for others, in particular his sister who also had a CT scan and was fearful of the technology and the outcome. The *explanation* he would give was very positive and overall he was very positive about the experience. The only difficulty he mentioned was that of not being able to follow the breathing instructions at the start of the scan. His *recommendations* were not really relevant to the study but were nevertheless reported to the departmental superintendent.

CTMALE6

With only one previous scan 12 months ago, this 54 year old male patient was not too sure what to *expect*. It appears that he was given more medical detail

about the significance of the scan, this second time as an inpatient, but little or no *information* with regard to the scanning procedure. He expressed some difficulties and was perhaps, understandably, more concerned with the outcome. It is however noteworthy that his *reaction in the scanner* was notably strong; 'I wanted to scream and sit up...get out of the room' (lines 37-40) he said and the head restraint caused particular difficulties. Further probing on this point revealed that this patient did not realise that no-one else was in the room with him, and on this rare occasion the radiographer had not given a *satisfactory* explanation. He demonstrated no particular *knowledge* of the technology but did request more *information* for others in his *recommendations*. The last question asked if it was desirable to have someone to speak to, rather than have written instructions. This question emerged from a previous interview and was re-tested (Patton, 1990) on this patient. In his response, which was very similar to CTFEM5, he commented that there was no time for *explanations* before the scan.

CTMALE7

This, the last CT interview in phase one, was particularly interesting because it was a failed examination. That is, this male patient was unable to tolerate the scan so the examination was terminated. Although visibly shaken, he agreed to the interview since, as is noted in the field notes, he wished to share his experiences. The receptionist had given him some brief verbal *information* but he was *concerned* at being claustrophobic and when he saw the scanner, the bore appeared much narrower than he *expected*. Although the procedure was explained to him, with *information* supplied by the radiographers in the room,

he couldn't take it all in (lines 33-34). So collectively his *reaction in the scanner* was one of fear and he vowed never to go near a CT scanner again (line 39). His *explanation* to others was not positive, which was understandable given his circumstances, although very complimentary towards the radiographers. He appeared almost resigned to the fact that little could change to make the procedure less daunting for him. His *knowledge* of the technology was good and he mentioned the use of 'x-rays for fine detail,' although interestingly, earlier in the interview, he stated that had he been given more *information* it would have meant that he wouldn't have come in the first place (line 52).

Axial Coding (Burnard, 1991)

When each code is considered across the interviews it becomes apparent that some codes are significantly more common or meaningful than others. However, at this inclusive stage, and while data analysis and collection 'run concurrently and inform each other' (Porter in Clarke, 1999, p.532), no early assumptions were made. By activating the 14 interviews in this first phase and analysing the coded segments, the frequency and location of codes across these interviews was demonstrated. It must be stressed however that this was not a mechanistic content analysis, but a qualitative thematic analysis (Burnard, 1991) and therefore no statistical inference was made. The researcher was concerned that by identifying 'common themes and codes' he was making a false assumption that each individual's world view or 'etic perspective' could be linked to another. This was however considered to be a reasonable approach to take (Burnard, 1991) especially since the insider's or 'emic

perspective' has also been analysed with the contact summaries for each patient (Miles and Huberman, 1994).

1.0 Free codes

The age range of the interviewees was from 42 years of age to 81 years of age with a mean age of 63.3. There were seven females and seven males. For half the patients in this sample, this was their first CT scan, five patients had had one before, and for one interviewee this was their 3rd and 5th scan respectively. It should however be noted, that many of the previous CT scans were in different hospitals, the identities of which have not been disclosed, where the physical environment and personal interaction would have been likely to vary, especially when compared to mobile CT scanners. Thus no attempt was made at making generalisations across such a small sample, rather, a form of constant comparison was employed (Glaser and Strauss, 1967). Previous experiences did not always ensure that the expectations of the patient would be more accurate, or that the scan would present fewer problems to them. For example, CTMALE2 was convinced that the technology represented a 'cancer scanner,' and in his mind it clearly did. He had no previous information or explanation despite the fact that this was his third scan. This contrasts with CTFEM3 who had no previous experience and, no information, but she expressed no concerns about the technology, confirming this by saying 'there is nothing to be frightened of, it's painless' (lines 62-63).

2.0 Concerns

Concerns ranged from minor reservations to very serious difficulties. Patients were worried about the outcome of the scan or the actual procedure, or in some cases both (CTMALE5). There was concern related to the non-technical aspects of the procedure such as the role of the contrast agent (CTFEM1), or compliance with the breathing instructions (CTFEM4), in addition to a fear of the imaging technology. The 'fear of being trapped in a tunnel' was common (CTFEM1, CTFEM2, CTMALE4, CTMALE7) in addition to the concerns expressed upon seeing the scanner. This latter point was highlighted by CTMALE4 who stated 'it's very frightening when you first go into that room you see that tube. It's that tube, if you could improve that' (lines 19-20). As outlined in the summary sheets there was a great deal of empathy and concern expressed for others. CTMALE5 and CTMALE7 were typical in their view of this. Finally, there was a further suggestion of concern with respect to being alone, with CTMALE6 unsure if anyone else was in the room with him.

2.1 Problems

This was originally a sub-code of concerns, but since it became difficult to differentiate between the terms, they were merged into one code 'concerns,' and no new data were evident that were not listed within the concern code. It was however seen as a distinct code in the first few interviews.

3.0 Expectations

It is clear that many interviewees, especially those with no previous experience (but not exclusively) expected to have an MR scan. The patients themselves

used phrases such as 'big tunnel,' 'big thing' 'tunnel' and 'long tube' (CTFEM1, CTFEM2, and CTMALE2) to describe what they were expecting. Some recognised their mistake when entering the room 'at first I got confused with the MRI scan I have seen on *Casualty*..and I thought oh! ((fearful expression)) but it wasn't, it was fascinating' (CTFEM6 lines 7-10). There are two significant points emerging from this statement, firstly, there is the link to the media portrayal of MR scanners, this appears to confuse the general public, and secondly there is a sense of relief when finding out that it was not an MR scanner. This second point is also evident in other interviews namely: CTFEM1, CTMALE1, CTMALE2. Once again there was empathy for others expressed and in particular expectations were focussed on the experiences of others, especially family members, providing a plethora of shadowed data (Morse, 2000). Those patients who experienced the most difficulties also tended to have the most fearful expectations. Two patients (CTFEM3 and CTMALE3) answered the question related to expectations with details of their medical conditions suggesting this particular question may have a degree of ambiguity.

4.0 Feelings

Naturally, this code had considerable overlap with expectations (code 3) and reaction in the scanner (code 10) amongst others. It was however, considered important to look at feelings as a separate entity in order to assess the range of human emotions and expressions. Feelings were very positive, few patients were worried with many finding the experience relaxing (CTFEM4 and CTFEM5). Even when probed further about the possibility of being

apprehensive, the vast majority expressed no feelings that would cause concern. The reasons for this are not immediately clear, although significant credit must go to the radiographers for frequently being cited as placing patients at ease and explaining the procedure. CTMALE1 was typical in his appreciation of the staff in stating that 'the girls were lovely' (line 20). The exceptions of note were CTMALE4 and CTMALE7; both had experienced difficulties during their procedures but it should be recognised that both of these patients were rather ill. CTMALE4 reported feelings of 'fright' when entering the scan room (line 19) leading up to panic when he thought the machine was going to collapse on him. CTMALE7, who was unable to complete his scan felt claustrophobic and nervous while waiting, and stated that 'you go in and that gives you a fright all this fancy equipment' (lines 68-69). This poses a question of whether or not radiographers take this 'fancy equipment' for granted, or does it represent a different thing to the patient?

There were additional feelings of fear due to misconceptions CTMALE5 thinking he was having an injection of radium and CTFEM7 worried that she would fall off the table. However, the general mood for this sample was summed up by CTMALE1 who declared 'It didn't worry me at all, I wasn't frightened, it was very pleasant to be honest' (lines 48-49).

5.0 Information

There was a distinct lack of information given to the patients' before a CT scan. The fact that the sample were all in-patients appears to have been a significant factor. *The researcher was aware that patient information leaflets*

were present on all the referring wards and departments, but this group of patients were not given the leaflets before their scans. Having no previous information was not always seen to be a problem for a couple of patients; one patient who had a particularly difficult experience and was unable to complete the scan (CTMALE7), declared that he would not have had attempted the scan if he was given information beforehand. CTMALE1 didn't think this information was important. Only one patient had received written information, and that was for a previous scan, not the current one, and she (CTFEM4) found that information to be particularly useful. Four interviewees (CTFEM1, CTFEM3, CTFEM5, CTMALE2) felt that there was no time for any information to be given since they were informed of their scans at short notice. These particular patients would then proceed to the examination with their own ideas of what to expect. Many comparisons were made with other imaging modalities in order to express meaning. Lay terms were, as would be expected, very common with use of terms such as 'polo-mint' being used by both professional and lay people. There was a conflict of opinion with regard to the duration of the scan with variations between three minutes and one hour for the same scan (CTFEM3, CTMALE2).

The method of communicating information to the patient was revealed to be a rather 'ad-hoc' affair, with verbal and non-verbal information being supplied from a variety of sources.

This code was therefore considered further under three separate groups:

1. Information given by nurses. (Glaser and Strauss, 1965)

This was surprisingly a very common event in the absence of any written details. It was not an automatic or formal communication and often the patient had to actively seek the information (CTFEM5). The way in which the scan was then described (outlined later) was given a sub-code (5.1 description) which is defined simply as: *the method used to describe the scan procedure to the patient.*

Whatever method was used there was, in some cases, obvious confusion and some patients failed to understand (CTFEM2). Unfortunately, the information given by the nurses was not always correct, with CTMALE5 believing 'they were going to inject [him] with some radium' (line 13), or another interviewee being informed that they were going for an ECG (CTMALE7). However, some of the detail was also reassuring to the patient and made a clear distinction between the CT and MR scanner respectively. 'There was no claustrophobia whatsoever' CTFEM6 (lines 23-24) was told.

2.0 Information from radiographers (Hogg and Bishop, 2000)

As would be expected this information was much more accurate and patients held the radiographers (not mentioned by title) in high esteem. There were however two notable exceptions, CTFEM1 and CTFEM2, who claimed that the use of contrast agents had not been explained to them but despite this,

remained 'loyal' to the staff by concluding the sentence with, 'well no, but it doesn't matter, I just took a chance' (CTFEM2, lines 28-29).

3.0 Information from Others (May and Fleming, 1997)

This group of 'others' included anyone apart from nurses or radiographers who had given the interviewee any information before the scan. The group was much more commonly used and varied than expected, and included relatives, friends, receptionists, medical staff and frequently, other patients. The method by which the information was imparted is considered under sub-code descriptions (5.1), and overall the information was not particularly positive. There was widespread confusion with details of MR scans being given to CT patients. Most informants referred to a claustrophobic experience, with no real clarification, most often associated with MR and there was conflicting information between individuals.

A very interesting finding was that some of the interviewees appeared to discuss the scan with other patients, with the best example being given by CTFEM3; she said, with reference to a discussion she had on the ward about her scan, 'the other patients thought it would be at least 20 minutes' (Lines 46-47). *This was the first indication of some form of patient networking.*

Information directly from medical staff was rarely mentioned within these interviews but when present tended to focus on the clinical indications for the scan rather than the process involved. That is to say, it is medical rather than technological or procedural information. CTMALE2 was a typical recipient;

his consultant had sent him for a scan to see 'what they were going to look for' (line 35).

5.1 Description

The descriptions given appeared to have common elements and the use of lay terms to convey meaning was a regular feature. The term 'polo-mint' was used to describe the CT scanner in many interviews. A nurse illustrated the experience to CTFEM5 using this concept which this particular patient considered to outline the process very well, so in this case it was an effective method of communication. There were several descriptions of the circular motion of the scanner (CTFEM2, CTMALE7) or 'things that go round and took pictures' (CTFEM1, lines 25-26). One of the most novel methods for describing the procedure came from a staff nurse who drew pictures in the air, CTFEM6 said 'he drew a rough picture in the air and showed me...then I realised what it was' (lines 21-23). The description was also heavily associated with the media but it is unclear whether this was CT or MR, that was portrayed on television (CTFEM5).

6.0 Knowledge (Mathers et al, 1999)

Lay knowledge of imaging procedures has rarely been investigated in radiography (Mathers et al, 1999). The researcher was surprised at the findings in this study. Despite little information beforehand, although admittedly half the sample had had previous scans, the knowledge of the group was very good. There was in almost every case an initial denial of any knowledge but this invariably led to the disclosure of a good level of understanding. Technical

terms were in abundance, with terms such as, 'deep x-ray,' '2 dimensional,' 'sections,' 'slices,' 'enhanced,' and 'magnify' being mentioned. According to Miles and Huberman (1994, p.61) 'phrases that are used repeatedly by informants (in vivo codes) are also good leads; they often point to regularities in the setting.' In fact only one patient was completely incorrect, (CTMALE5) who spoke of ultrasound. Due to the complex technical nature of MR it was not expected that patient knowledge would be to the same high level in those interviews.

7.0 Misconceptions

Considering the paucity of information available to these patients there were few misconceptions. By far the biggest misconception was the firm belief that the interviewee was having an MR scan. Very frequent reference was made to a 'tunnel,' 'long tube,' and claustrophobia most often associated with an MR scan. It is perhaps not surprising that CT and MR scans are confused, there are many similarities, not least the fact that the patients lie inside the gantry for each. In addition, the interviewees themselves have identified the strong media portrayal of imaging scanners which seemed to cause further confusion. Other misconceptions of note were related to the knowledge of the technology, and have therefore been outlined with the respective codes. The fact that the CT scanner should have a much wider bore was reported by CTMALE7 and the idea that the scanner was a cancer scanner was the belief of CTMALE2.

8.0 No Problems

It was noted that many patient interviews were frequently coded with 'no problems.' 'It's quite good,...I enjoyed it' (CTFEM2 line 76) was a typical response from many patients. CTMALE1 was happy not only to report that he had no problems but later that he had found the experience interesting. This was in line with CTFEM6 who repeated several times that she had found the technology fascinating. CTMALE5 spoke for the majority when he stated 'I had no worries about it at all, I just imagined that it was well.. just like another x-ray that is all' (lines 17-18).

9.0 Other Radiology

Not surprisingly, this code did not feature significantly in this phase of the interviews given the sample size. It was however recognised by CTFEM4 within the barium enema examination and CTMALE7 referred to the equipment for a barium meal. *Anecdotally, fluoroscopic equipment can also appear to be intimidating for patients with the component parts in very close proximity to the patient⁴.*

10.0 Reaction in the scanner

This code attempted to exclude everything before and everything after the scan and sought to uncover the personal interaction with imaging technology. For CTFEM5 and CTFEM2 this represented a realisation that they could manage the scan, the equipment wasn't as big as they expected and they seemed quite

⁴ Theoretical sensitivity of the researcher recognised the potentially intimidating nature of this equipment, both from his perspective as a patient and a radiographer practitioner.

relieved. CTFEM5, CTFEM6 and CTMALE3 enjoyed their time in the scanner, finding it comfortable and fascinating.

The reactions in the scanner were by no means all positive ones. Four patients (CTFEM3, CTFEM5, CTFEM7 and CTMALE4) out of the fourteen admitted to closing their eyes during the procedure. Again the reasons for this varied considerably, the first three declared no particular problems in the scanner, while at the other end of the spectrum, the male patient CTMALE4, thought the machinery was going to fall on top of him and that he may have had a heart attack. CTMALE6 who had his head strapped down for his scan admitted to being scared, but was reluctant to say anything, declared later that his instincts during the scan were to 'scream and get out of the room' (lines 35-40). Of equal note was CTMALE7 who, all in all, had a miserable experience. He declared that if he'd panicked he would have been in trouble and blamed his failure to complete the scan on claustrophobia. It was noticeable that he also had chronic emphysema.

11.0 Recommendations

Some patients could not think of any recommendations, perhaps reflecting their satisfaction with the procedure or a lack of resources to imagine better possibilities. Those that did expressed a good deal of empathy and encouragement for others, and suggested that any of their own fears and apprehensions may not be divulged to others. The need for more information in writing was a common recommendation as well as 'something to hold to take their minds off' (field-notes) the procedure (CTFEM5). Interviewees listed 'not to worry,' 'be reassured,' and to have someone to talk to (CTFEM5,

line 35 and CTFEM6, line 62, respectively). By this they presumably meant during the scan, although that point is not entirely clear, thus giving a humanistic element to a high technology investigation. CTMALE4 requested more details about what was happening and was the only interviewee to be critical of the staff, his clear recommendation was to 'talk to them [patients] first and then take them into the scanner, not just take them into the scanner. It's no good talking to them after, that's too late' (lines 58-60) he claimed. The other patient who experienced difficulties (CTMALE7) suggested that patients should be shown around the scanner beforehand. *Interestingly, this is a reasonably common event in the MR scanner at this general hospital but is not practiced in CT since this modality is thought, anecdotally at least, to present few problems for patients.*

12.0 Satisfaction

From the analysis so far, it was clear that nearly all of the patients were satisfied, with two notable exceptions being CTMALE4 and CTMALE7. The measure of satisfaction in the procedure has largely been inclusive within other codes such as no problems (code 8), expectations (code 3), feelings (code 4) and reaction in the scanner (code 10). At this point some of the codes became exhausted or required merging (Burnard, 1991) in order to avoid repetitious data display. Therefore, in addition to what has already been recognised in the data, this code revealed that CTMALE2 would be more than happy to have another scan, CTFEM3 really enjoyed the experience and CTMALE3 was pleased to have had the scan and was awaiting the result.

13.0 Explanation (May and Fleming, 1997)

This proved to be a very interesting code revealing a great deal of fascinating data. Most patients were very encouraging in their explanations and would have ensured that the family member or friend wouldn't worry and provided a concise explanation. CTFEM3 AND CTMALE3 were typical in this approach. CTFEM4 would tell 'others' not to be intimidated by the machinery, as would CTMALE4, CTFEM7, CTFEM5 and CTMALE6. All used terms such as 'polo mint' and 'tunnel' to describe the experience. For CTFEM5 this term was introduced to her by a nurse on the ward and she continued to use it, thus ensuring the survival of this term. Finally, CTMALE7 declared that if the individual he was explaining to was claustrophobic, he would tell them not to come. He firmly believed that although the staff were very good with the patients 'there is nothing that can be done' (line 48).

Summary of CT data

Collectively, these interviews demonstrated few concerns for the majority of patients. Many were expecting to have an MR scan due to the distinct lack of information on the one hand, and the influence of other people. On the other hand information had been obtained from a variety of sources and largely this had replaced the traditional patient information leaflet. Pictorial representation of the scanner appeared to be a most effective method of conveying understanding, this together with the use of lay terms, such as 'polo-mint,' seemed to create common understanding between nurses and patients. These methods of communicating were therefore, truly symbolic. Empathy emerged as a common theme in almost all of this sample. Lay knowledge of the CT

imaging equipment was very good. With no previous literature on patient knowledge being published, this was an unexpected finding. There was a repeated request for more contact during the examination, but overall this sample were not too concerned by the imaging procedure. However, those that did experience problems spoke in graphic terms about the frightening experiences and one interviewee had to terminate his examination due to his major concerns about the equipment falling on top of him.

Implications for practice

Despite anecdotal evidence to the contrary, some patients do experience difficulties when having CT scans. Radiographers need to be aware that a minority of patients are very anxious about the procedure and that their fears and anxieties are heavily influenced by other people outside the department. The profession should be aware that there may also be occasions when, irrespective of their existence or attention to detail, the patient information sheet plays no role in preparing the patient for the imaging procedure.

Implications for future research

The extent to which the media influence patients' perceptions of medical imaging requires further investigation. Research into the knowledge that patients possess about these procedures is also of critical importance for the future.

Explanation of Figure 4.0 (overleaf)

The sample size and mean age of interviewees are displayed across the top of the page. The codes listed numerically match those with the software programme Maxqda and the means of establishing rigour are indicated in italics. The indigenous and sensitising concepts are not listed in any particular order since no attempt has been made at this stage to develop any hierarchical significance. As mentioned in the methodology, the rounded box (Seidel, 1994) at the bottom of the figure represents the main findings for this portion of the data. In addition, Appendix 8 provides an overview of the codes and key words from the voluminous data, and facilitates cross-referencing. However, the researcher was mindful that such tabulation of qualitative data, whilst useful and appropriate at this stage, also created a further element of reductionism to an already mechanistic process of open coding and, to a lesser extent, axial coding.

Section Two (Phase One). MR Results

Following the same process as for the CT interviews, each MR interview in the first phase of the study was considered.

Contact Summary Sheets (Miles and Huberman, 1994) (n = 11)

MRFEM1

This interview was of a 47 year-old female who had a close association with the School of Radiography in an administrative capacity. As the first MR interview it was rather more open in structure than some of the latter interviews (Miles and Huberman, 1994). The scan was her first experience of MR, although she had previous experience of a CT scan, on a mobile rather than a static unit. She was unable to complete the examination in one attempt, having to have breaks between the scans. She became rather distressed in the position she was asked to maintain for the duration of the scan and this appeared to concern her. Her *reaction in the scanner* was one of not wanting to embarrass herself, feeling powerless she said, 'I was glad to get out' (line 34). She felt very closed in and her *problems* were mainly due to a lack of space, she had not *expected* to be positioned so far into the scanner. When questioned about *information* beforehand, she claimed that to have known more about the procedure would probably have made her worse. Interestingly, she assumed that she didn't get information because 'they tend to think I know what is going on' (line 84), this is similar to the assumption made by CTFEM4. A request was made for any details to be formulated in 'everyday speak' (line 60) suggesting that the details are sometimes difficult to understand. She *felt* claustrophobic in the scanner, she tried to comply with instructions but

questioned her own 'staying power,' since she was in such an uncomfortable position for long periods. This patient had a reasonable level of MR and CT knowledge, and this was not surprising given her background. She had also experienced a CT scan several years ago but didn't feel that it was as bad. Although satisfied with large elements of the scan and grateful for the care and assistance of the radiographers, she said 'they greet you, you get ready, you go into the room and they are gone' (lines 112-113).

MRFEM2

This was a particularly pleasant 49 year old female who was happy to be able to contribute towards the research study. It was her first MR scan and she had a philosophical approach and an open mind about what to *expect*. Pictures on the television had given her an idea of what to expect, in terms of the physical appearance of the equipment, but this was supplemented by the patient *information* leaflet which was found to be very useful. She claimed to have read it a few times in order to prepare herself for the scan. She was very relaxed *in the scanner* and she made some striking *analogies* with regard to the experience being like a 'baby inside the womb' with the 'back-beat' (lines 50-51) representing the heart beat. This point reinforced the idea from the CT interviews; to understand the experience in patients' words would enable the researcher to enter their 'frame of reference' (Burnard in Clarke, 1999, p.532). The procedure was described as being straightforward in her explanation to others and was therefore reassuring. Overall, she was very satisfied with the whole experience, especially the standard of care from the radiographers, referred to in this case as 'nurses.' Her knowledge involved a misconception

due to thinking the technology involved ultrasound, but she also acknowledged a desire to be more aware.

MRMALE1

This 63 year old male experienced a range of problems when undergoing his first MR scan. Due to his size; 18 stone and a 48 inch chest, he was extremely close to the bore of the magnet, he *felt* trapped and very hot. He appeared to contradict himself at times, he said his biggest fear was 'going through the enclosed tunnel (line 17) and then declared that he wasn't worried in the next sentence. *Whilst leaving the scan room this patient was visibly sweating and shaking, he was clearly disturbed but, when questioned initially, dismissed having any problems.* Further probing revealed he was rather perturbed by the experience. Like the patient before him (MRFEM2), he described his experience by using *analogies* to express his concerns. He had *expected* an 'enclosed tunnel' (line 8) from what other people had told him before, and claimed to have received no formal *information*. His *reaction in the scanner* was one of panic, and a *feeling* of suffocation, resulting in him having to terminate the examination before its completion. He illustrated his *feelings* with many terms such as 'coffin,' 'cork in a bottle,' and graphically described his experience as similar to wearing the incorrect size of suit. In his *explanation* he was very fair and recognised that 'average' size patients wouldn't have many problems, or at least, not due to the restricted bore dimensions. He let the researcher know that he had been in more difficult situations before 'but there was always that element that you could get out' (lines 50-51) he stated.

He demonstrated a good level of *knowledge* and not surprisingly made a *recommendation* for a larger bore on the scanner.

MRMALE2

This patient was very complimentary about the radiographers, who once again were referred to as ‘nurses.’ This 55 year-old male was *satisfied* with his first experience of an MR scan. He reported some claustrophobia at one stage but overall felt fine. He demonstrated, like many other interviewees, a great empathy for others having an MR scan. He had expected a ‘bigger tunnel’ (line 9) and spoke of his surprise at how noisy the machinery was. The *explanation* he would give to others was one of reassurance, especially for children. This gentleman had received *information* beforehand, which he felt was very good but he commented that the radiographers’ explanations had also been very accurate. He would be pleased to have another scan and *recommended* a larger, quieter machine. The previously identified *recommendation* of having a look at the equipment beforehand was rejected in favour of a more pragmatic approach of ‘rather get on with it’ (line 54). The use of *analogies*, which had been so dominant in the early MR interviews, was tested within a question and some agreement was reached. *With increasing experience and confidence the researcher was developing a more effective interview style. In addition, it was evident, as discussed in the last chapter, that productive data only emerges after the initial interviews (Denzin and Lincoln, 1998).*

MRFEM3

Even though this was her second scan, this female was still unsure about what to *expect*. Her first scan was on a mobile MR unit and turned out to be a very unpleasant experience. She had not received any *information* which was not typical of MR patients interviewed so far. She described her first scan as *being similar to* a 'set of drums or a big heartbeat' (line 23). She was however, more comfortable with this second experience, *feeling* relaxed and not being so enclosed. This lady felt alone with the machine, being aware that there was no-one else in the room with her. This feeling of 'isolation,' which was rarely encountered in the CT interviews, was however tempered by having the alarm button in case she had a problem. She expressed a reasonable *knowledge* of the equipment, although the term 'Magnetic Resonance' does provide rather a large clue that magnets are involved in the process. Her *explanation* to 'others' was full of reassurance for future patients and praise for the radiographers' patient care skills. She suggested that patients should close their eyes, unless they felt brave. This *reaction in the scanner* of closing one's eyes was, as in the CT interviews, an increasingly common feature. Her only *recommendation* was for an illustration of the scanner on the leaflet to reduce the thoughts of claustrophobia.

It was becoming noticeable that access to a sufficient range of patients was very limited and an application was made to the ethics committee to approach orthopaedic outpatients for the MR interviews. This was granted (Appendix 2) and enhanced the progress of the study.

MRFEM4

This 41 year old female had just had her first scan and was rather relieved that the experience had not been as bad as she had *expected*. She was given her appointment at short notice which accounted for the lack of prior *information*. Interestingly, her family had given a 'nickname' to the scanner when discussing it. They labelled it 'Stargate' (a science fiction gateway into another dimension) thus providing some element of ownership and informal discussion about the technology. Her *reaction in the scanner* was to shut her eyes, not that she was bothered she claimed, but 'to other people it could be very daunting, very daunting, it's just so close to you' (lines 30-32). She was nevertheless a little apprehensive and *felt* calmer once the radiographers had explained the procedure and given her the emergency button. This button, like in previous interviewees, MRFEM1, MRFEM3 and MRMALE1, gave the patients some element of control. This is reflected in her statement, when she insisted that 'I could have stopped it at any time, ehm..that was nice, if I couldn't have had that [emergency button] I don't think that I would have been so calm about it' (lines 40-43). Although she could not see the radiographers and was unaware that they were not in the room, she was *satisfied* as long as she could hear them, indicating that some form of communication was important. Her response to the *analogies* question, now a regular addition to the interview schedule, was very powerful. She described the process as being similar to a 'coffin on a building site' (line 64-65) and agreed with other analogies presented to her. Her *explanation* would convey a pleasant experience suggesting that if the patients closed their eyes, 'what you can't see can't hurt you' (lines 107-108). A high level of knowledge was demonstrated

and she recommended relaxing in the scanner to pass the time more quickly. Finally, there was agreement with the idea of including a picture of the scanner on the patient information leaflet.

MRFEM5

This 35 year old female was very *satisfied* with her MR investigation. She had *expected* what she had seen on the television for this, her first scan. She felt it was more appropriate to get details at the time of the examination, so that people do not get worked up beforehand; an uncommon, if not novel suggestion. Even so, *her reaction in the scanner* was one of fear, not wanting to open her eyes, thinking she was in a coffin. She felt vulnerable and trapped, although she did not agree that this experience could be related to being inside the womb, as had previously been suggested by other patients. Her *explanation* was encouraging and simple, describing the procedure like lying on a sun-bed (line 58). Her *knowledge* was however poor, with a *misconception* that the technology used x-rays, although there was still a reference towards sectional imaging of different organs which did demonstrate a good basic awareness.

MRFEM6

This female was particularly impressed by the radiographers' patient care skills. She didn't know what to *expect*, other than the fact that it would be similar to CT. She had accompanied her daughter for a CT scan and expected it to be very similar. Indeed, she described the two scans as being much the same but MR was a lot noisier. She did have a *leaflet* before the scan, this

being her first experience, but felt that any technological details would not have made much difference anyway. To some extent this may question the value of patient information leaflets previously regarded as essential (Hughes, 1994). She knew that the radiographers wouldn't be in the room and had no problem with that. Once again a good deal of empathy was displayed and the experience was unusually said to be *analogous* to being on a 'ship' (line 44). A good level of *knowledge* was displayed and there was full agreement to the suggestion of placing a picture of the scanner on the leaflet. There appeared to be a need, in line with other patients, to visualise the technology and orientate herself beforehand.

MRFEM7

This was a very interesting interview since, although this female interviewee outlined her *concerns* and fears throughout the interview, it was only right at the end that the full extent of her traumatic experience became apparent. She hadn't slept all night worrying about the scan and thought that the scanner was a closed ended tunnel (lines 82-83). She described the *experience* as a 'very huge heartbeat' (line 31) and the noise made her feel a little more tense.

A reference towards being isolated was expressed, but once again the emergency button was found to be of great comfort and gave her some element of control. This woman was also complimentary towards the technology itself, 'well it's doing a grand job here, it's finding out what's going on in that grotty knee of mine' (lines 51-52).

Her *explanation* to others was not particularly encouraging with the use of the word 'scary,' however, she did also stress that the procedure did not hurt. Initially, she showed a poor level of *knowledge* but when probed further demonstrated a good understanding. Like the previous interviewee, she expressed a concern at entering into the scanner head first.

MRFEM8

This was the 3rd MR scan for this female patient, having already had a bad experience and feeling very claustrophobic on the mobile MR van. One again, the fact that she entered the scanner head first seemed to *concern* her, she felt trapped and in close proximity with the equipment. This lady was particularly hot *in the scanner* and suspected that her nervousness made her mouth dry. She described the *analogy* as 'woodpeckers or someone chopping wood' (line 50) which presumably is a reference to the loud noise and could also relate to the heartbeat expressed by others. Interestingly, she considered the second scan was even worse than the first, since she was aware of what was going to happen. Her *explanation*, although stressing that it was painless, could also be considered as a little alarming, but it was accurate in detail. She *recommended* being given more time in the room to orientate herself and for her husband, who was waiting for her, to be allowed in the room with her (*which is permitted*) or at least kept informed.

MRFEM9

It became apparent that people had been telling this female interviewee some awful stories before her scan, which naturally made her more apprehensive. It

was the first time that this 53 year-old woman had had an MR scan and she was *expecting* a closed-ended scanner (line 7) from television pictures that she had seen. Like other interviewees, she was relieved when she actually saw the equipment, and from this point on thought that she could cope with the experience better. She claimed she was very worried *in the scanner*, wondering how she could get out if she needed to. There was a concerted effort to comply with the instructions and keep still throughout the whole procedure. Interestingly, she thought that she would be projected out of the scanner, presumably at speed, at the end of the examination. She had felt foolish for not realising that the scanner was open at both ends, although had it not been so, she would not have gone in, she admitted at the end of the interview. She stated many times that she had made a fuss over a trivial process, 'It was a lot less than I *expected* to be honest' (line 55) she declared. She had received a *leaflet* but requested a picture to help her visualise the equipment. Significantly though, a friend's description of his scan had made her considerably more fearful and made her doubt her own ability to cope. Her *explanation* made reference to coping much better with the emergency button and a determination to complete the scan. She stated 'well I can do that' (line 68) and having been discouraged by others, she would make sure the discouraging descriptions given to her were not repeated. She had little *knowledge* of the technology other than the fact that it was computerised, but also referred to the process as a 'conveyor belt' (line 81). Her recommendations were to reduce the noise and have someone to talk to beforehand.

Axial Coding (Burnard, 1991)

Following a further period of immersion and incubation with the data, other more complex concepts were starting to emerge from the existing codes. Although they all derived from the data, i.e. they were indigenous (Patton, 1990), the sensitising views gained from the literature and theoretical sensitivity of the researcher made them more obvious than would be initially apparent. For example: the literature on 'self' (Goffman, 1971; Shannon and O'Connor, 2000; Morrison and Burnard, 1991) made more sense of the need for the patients to retain their self respect and dignity.

1.0 Free Codes

The age range of the interviewees was from 35 years of age to 68 years of age with a mean age of 50.5. Due to the nature of the theoretical sampling strategy the gender split was not even, as it was with the CT interviews. At the end of this first phase there were 9 female and 2 male MR interviewees, giving a total of 11. For nine of the eleven patients in this sample, this was their first MR scan, one patient (MRFEM3) had one previous scan and for one further patient (MRFEM8) it was her 3rd scan. Having had 2 previous scans didn't prevent MRFEM8 from describing the MR scan as 'a necessary evil' (line 4). Previous experiences of others on the mobile MR van appeared particularly significant in developing preconceptions in the minds of patients.

2.0 Concerns

The concerns noted in the MR interviews were much more dramatic than in CT. The smaller bore of the magnet undoubtedly caused alarm in many

patients. This close association between the technology and the patient being scanned was often met with caution, 'I never felt like I did in that machine' (MRFEM1 line 90), it was 'a bit frightening' (MRFEM7, line 38) or even 'it felt like suffocation' (MRMALE1, line 40) were comments. Many were concerned that the scanner would be closed in at both ends (MRFEM1, MRFEM7, MRFEM9, MRMALE1) and some of the recommendations made were to have a picture of the scanner on the patient leaflet to dispel this myth. *It is thought that this idea of the enclosed tunnel stems from early MR mobile units that were often closed at one end.* Another concern was that all patients went into the scanner head first (MRFEM1 and MRFEM8). As with the CT interviewees, retaining an element of control was an important issue, the emergency button gave them the ability to cope with the situation. If the patient was particularly anxious, some of their concerns were manifested in physical symptoms such as sweating hands (MRFEM9) and raised body temperature or tight chest (MRMALE1). There was a concern by the patient that they may have moved during the scan and once again the level of compliance was very good (MRFEM9). The protection of 'self' was becoming more apparent (MRFEM1 and MRFEM9) as a concern, but unfortunately this was wasn't helped by 'stories' being relayed from other people. 'Different people have been telling me some awful stories' claimed MRFEM9 (line 94).

3.0 Expectations

Similar to the CT interviews patients expected a 'big cylinder' into which they would be projected (MRFEM7 line 8), although, interestingly, no-one reported that they were expecting a CT scan. Some didn't know what to expect

(MRFEM2 and MRFEM4) or actually preferred to keep an open mind, although whatever the case the influence of the media, family and friends clearly 'shaped' their expectations. 'Oh you'll know when you've been in one of them,' (MRFEM9, line 50) this patient was told bluntly, thus automatically creating a negative expectation in her mind. There were a few references to the fact that the scanner was noisier than expected (MRFEM2, MRFEM6, MRMALE2) but this didn't appear to worry these patients unduly. Often the size of the bore was smaller than expected but on the other hand there was also relief upon seeing the equipment. Comments such as 'I was better seeing that [scanner] before I went in' (MRFEM9, line 37) were expressed in line with CT findings. It was pleasing to note that there were few major misconceptions in terms of what the patients were expecting to happen.

4.0 Feelings

Several reports of feeling nervous were recorded during the interview process (MRFEM1, MRFEM7, MRFEM9) but once again the outcome of the examination will have been a contributory factor. While some respondents felt merely foolish or silly (MRFEM1 and MRFEM9), others experienced feelings of being trapped and the urgent need to get out of the scanner. Arguably, the most extreme case was that of MRMALE1, although he clearly felt distressed in the scanner he denied being worried and tried to place his experience into context, thereby admitting his vulnerability but also protecting his 'self image.'

He stated:

'I've been in enclosed spaces many times before, I was in the armed forces for 22 years and the police force for many years, so I've been in some bloody awful positions, some tight positions, in enclosed spaces, but there was always that element that you could get out, with this once you're in that's it, you can't get out.'

(lines 48-51)

The researcher considered it was interesting that he should communicate his feelings in such a manner.

5.0 Information

Since the majority of the sample were out-patients, as opposed to all in-patients in CT, many had received patient-information leaflets in the post before their appointments. Therefore the diversity of information was not as apparent as it was with CT patients. Most, but by no means all, the patients found the information to be very useful and one read the leaflet several times in preparation for her scan. Of those that didn't have prior information, one (MRFEM1) didn't feel that it would have helped her. Medical information, as mentioned previously, focussed naturally on the medical condition not the procedure (MRFEM4). This particular interviewee gave the most interesting account within the information code, with active discussion taking place in the family home resulting in the scanner being given a nickname. 'Stargate,' as they referred to it, was a logical name since this lady told me 'you don't walk through it' (MRFEM4 lines 95-96). *In the absence of any written information it is unclear how widespread this practice of 'making up your own impression' of the technology maybe. It was hoped that phase 2 might answer this and other emerging questions.*

One patient thought it was more appropriate to have information at the time and not beforehand (MRFEM9). MRMALE1 claimed to have had no information at all, but when reading the transcripts it was unclear how he knew to attend wearing the correct type of clothing for his scan.

5.1 Description

The descriptions of the MR scans were expected to be as unusual and diverse as those of CT patients, however this was not the case. There was some commonality in recognising some aspects of the technology and the term 'tunnel' was applied regularly within this setting. Interestingly, the MR scan was never referred to as a 'polo-mint,' suggesting that there is some differentiation between the types of scans and the way they are described. Since more information was available in a written format, verbal and non-verbal descriptions were almost absent within this sample. However, MRMALE1 was informed that he would go through a long 'tunnel' (line 8) and be very close to the machine. Any verbal depiction of the scan provided by radiographers seemed to allay most fears (MRMALE2). The descriptions given in the media were obviously from a wide range of sources, but nevertheless were very powerful (MRFEM2, MRFEM5, MRFEM7), enabling a predetermined picture to be formed in the patients' mind.

6.0 Knowledge (Mathers et al, 1999)

Contrary to initial thoughts, lay knowledge of this sample was very good. Given the complex nature of the imaging technology, only a very superficial understanding was requested, but overall there was reasonable appreciation of

MR from a lay perspective. After initial denial, of any knowledge, as in the CT sample, technical terms were used freely. References to 'slices,' (MRFEM1, MRFEM4, MRFEM5, MRFEM6, MRMALE2) 'computerisation,' (MRFEM1, MRFEM9, MRMALE2) and the making of similarities with CT technology (MRFEM1, MRFEM6, MRFEM9) were common. Some patients were able to distinguish between the use of x-rays to image higher density bone as opposed to soft tissue and there was even an appreciation that MR is less harmful than x-radiation. One respondent, who was very curious about the technology, associated the noisy vibrations she could feel with sound waves hitting parts of the body, similar to ultrasound technology, although she didn't use that term (MRFEM2). Apart from this, and unlike the CT interviews, there was no evidence of any major misconceptions, they either demonstrated a good understanding or they did not answer the question.

7.0 Misconceptions

The main misconception was that the scanner was closed-in at the back and this appears to stem from the media portrayal of scanners (MRFEM9) or previous experiences in a mobile MR van (MRFEM1). 'Others' who consisted of friends or family, led MRFEM9 to believe that she would feel strange 'rollers' (line 47) underneath her during the scan but this would be explained by the vibrations of the equipment. However, the few misconceptions held by patients were usually addressed upon seeing the technology, that is, relief that the machine was not as bad as they had expected or by speaking to the radiographers.

8.0 No Problems

Few patients experienced no problems with their MR scan, but most were minor or transient in nature with the exception of MRFEM1, MRMALE1, MRMALE2. The information leaflet seemed to prepare the patients well, despite other external influences, as (MRFEM7, lines 14-15) pointed out 'it was good, it told me pretty well what was going on.'

9.0 Other Radiology

None of the patients claimed to have experienced difficulties with other imaging modalities. The MR scan was, according to MRFEM1, very different; she supported this by saying 'I have had my fair share of ordinary x-rays but I never felt like I did in that machine' (lines 89-90).

10.0 Reaction in the scanner

The restricted space caused the most extreme reactions in the scanner. Patients claimed 'it was too close to my face' (MRFEM1, line 22) and that they were unable to move to get out. MRFEM6 claimed that even if you didn't normally panic, you would panic inside the scanner. It was becoming apparent however that there were two types of panic attacks occurring; firstly the reaction towards the enclosed environment as outlined, and secondly the concern to protect 'self-image.' There was a desire not to appear inadequate (MRFEM1) in addition, some patients felt foolish or silly about how they reacted in the scanner (MRFEM7 and MRFEM9). Some patients admitted that they were nervous, tense and somewhat isolated, however the emergency button enabled them to cope with the situation. As expected, several interviewees spoke of

claustrophobic feelings while having the scan. Even with no previous experiences of claustrophobia in confined spaces, the feeling was still labelled as claustrophobic. Thoughts whilst being scanned turned to contemplating how the technology operates to, quite naturally, what would be detected (MRFEM5).

11.0 Recommendations

Only one patient did not think it was possible to improve on the service provided, describing it as 'excellent' (MRFEM2, line 111). As with the CT interviews, there was a great deal of empathy expressed for others, especially if they might be claustrophobic. The most common recommendations were to close your eyes (MRFEM3), relax (MRFEM4), and to place a picture of the scanner on the information leaflet. Amongst the most interesting suggestions were to explain how the machine works (MRFEM4, MRFEM5, MRFEM8) and even involve family members in the process (MRFEM8), although MRMALE2 did not feel this approach was necessary. An element of human contact does appear to be important since 'looking at the machine...it's a very frightening thing' declared MRFEM4 (line 120-121). A larger bore was the obvious recommendation, and one that is being addressed with 'open magnets,' that would facilitate a more comfortable examination for patients like MRMALE1 of a larger stature.

12.0 Satisfaction

Although many patients had fears and concerns, they were satisfied overall with the MR experience. The sample were very complimentary towards the

radiographers (MRFEM2, MRFEM4, MRFEM5, MRFEM6, MRFEM7, MRMALE2), this was summed up by MRFEM2 in particular who said: 'I mean I know that it is their job to be caring, but they actually sounded very concerned and were really nice' (lines 107-109). Being remote from the radiographers wasn't an issue as long as the patient could be heard (MRFEM4, MRFEM1) and most would be more than happy to have another.

13.0 Explanation (May and Fleming, 1997; Charon, 2001)

Once again this code revealed some interesting data and patients would ensure that the family member or friend, who would be the recipient of their explanation, wouldn't worry by providing them with a clear account of the process. Although they recognised that claustrophobic patients have problems, expressions and terms included 'straightforward' (MRFEM2), 'comfortable' (MRFEM3) 'do not worry' (MRFEM6) and the procedure was likened to 'lying on a sun-bed' (MRFEM5). The explanation provided by MRFEM7 was not so encouraging, saying that it was a scary experience and you 'just have to get on with it' (lines 59-60). The element of coping was however concurrent throughout most of these codes and none more so than with MRFEM9 who would clearly explain that the end of the scanner was open, and that you have control with the buzzer and was very reassuring.

14.0 Analogies (Hunter et al, 2002)

Analogies were first introduced in the final few CT interviews and became a regular feature during the MR interviews. The interesting point is, however, that many patients themselves used analogies to express their own meaning, in

addition to the analogy question posed by the researcher. Once again this enabled me to enter into their 'frame of reference' (Burnard, 1991).

Being inside the womb was the most novel analogy with the noise representing the maternal heartbeat (MRFEM2). This was considered to be a soothing thought and was recognised by a few informants (MRFEM4 and MRFEM7) but not exclusively acknowledged by all (MRFEM5). Reference to a 'big set of drums' was associated with the loud noise (MRFEM3), and the rhythm was overall considered to be relaxing.

However, for those that found the experience unpleasant, they used negative analogies, such as being inside a coffin (MRFEM4 and MRFEM5) expressing the restricted space and a sensation of being trapped. The analogy of the ship (MRFEM6) was not repeated, neither were the woodpeckers (MRFEM8), washing machine (MRFEM9) or tomb (MRMALE1). The most disturbing analogy was that expressed by MRMALE1 who considered the experience to be like 'a cork in the neck of a bottle' (line 33), which was a very graphic representation of how he felt.

Some patients could not think of an analogy, 'I am not so imaginative' (MRFEM7 line 30) the researcher was told. However, the diversity of analogies given demonstrates that the scan represents different things to different people, and as MRMALE2 suggests, the imaging experience may be unique and not similar to anything else.

Summary of MR data

As expected, the concerns expressed by this sample were much stronger than those of the CT population. This concurs with the literature on MR scanning (Gray, 1999). If the patient had previously experienced an MR scan on a mobile unit, invariably this procedure, undertaken in the main department, was a much more pleasant procedure. Being mainly out-patients they did receive information beforehand, although this was not always as powerful an influence as stories from 'other people.' Analogies started to emerge as a method of communicating their feelings, some were useful and regular, others completely unique to that individual. The confined space in the 'tunnel' and previous poor experiences, especially on the MR van, contributed towards some major preconceptions. Some felt relaxed, foolish, relieved or terrified by their imaging experience. Upon seeing the scanner for the first time the reaction varied from a feeling of relief to fear. The element of control was starting to emerge as an important factor, this seemed to determine how well the patient complied. Some males refuted any claims that they were concerned, this was despite their obvious physical anxieties.

Implications for practice

The feelings of embarrassment and isolation clearly need to be addressed. In addition, since the visualisation of the scanner appears to be a critical factor, placing a clear picture of the scanner on all correspondence would seem to be a useful recommendation.

Implications for future research

The results clearly indicate the need for more qualitative assessment of patients' feelings. The data showed a trend towards a poor self-image and self-belief, that seemed to make many patients reluctant to ask for assistance. Just why this should be requires further exploration.

Explanation of Figure 4.1 (overleaf)

The analysis is 'mapped-out' in Figure 4.1, which retains common elements from the CT interviews in order to maintain the inductive flow of the study. It follows the same format as the previous figure in this chapter. The increasing levels of rigour are noted in the right hand column and there are more sophisticated discoveries as a result of these data. Further cross-referencing of results is provided in Appendix 8.

Figure 4.1 Phase One MR results

Phase One MR interviews	Sample (n=11)	mean 50.5 years	<i>Establishing Rigour</i>									
Codes 1	2	3	4	5	6	7	8	9	10	11	12	13
Indigenous Concepts												
Expectation of being closed in			Very satisfied		Lay terms (cork in neck of bottle)		Influence of others and media		asked same questions or			
Empathy for others			Radiographers praised for care (not named)		Good level of knowledge		Reaction on seeing scanner positive or negative		<i>Equivalence</i>			
Fear of technology			Isolation/trapped		Previous scans (MR mobile)		Feeling embarrassment		<i>Prolonged Involvement</i>			
Leaflet not always useful			Claustrophobia		Reference to technology		<div style="border: 1px solid black; border-radius: 15px; padding: 10px;"> <p>Discoveries</p> <ul style="list-style-type: none"> Orientation Closing eyes in scanner Control Influence of others and stories Relief or fear when seeing scanner Unique experience Self-image and lack of self-belief Male denial Informal communication Use of analogies </div>					
Wish to comply			Conveyor-belt technology									
Sensitising Concepts												
Increasing literature review												

Section Three (Phase Two). CT Results

Redefining the coding framework:Phase 2

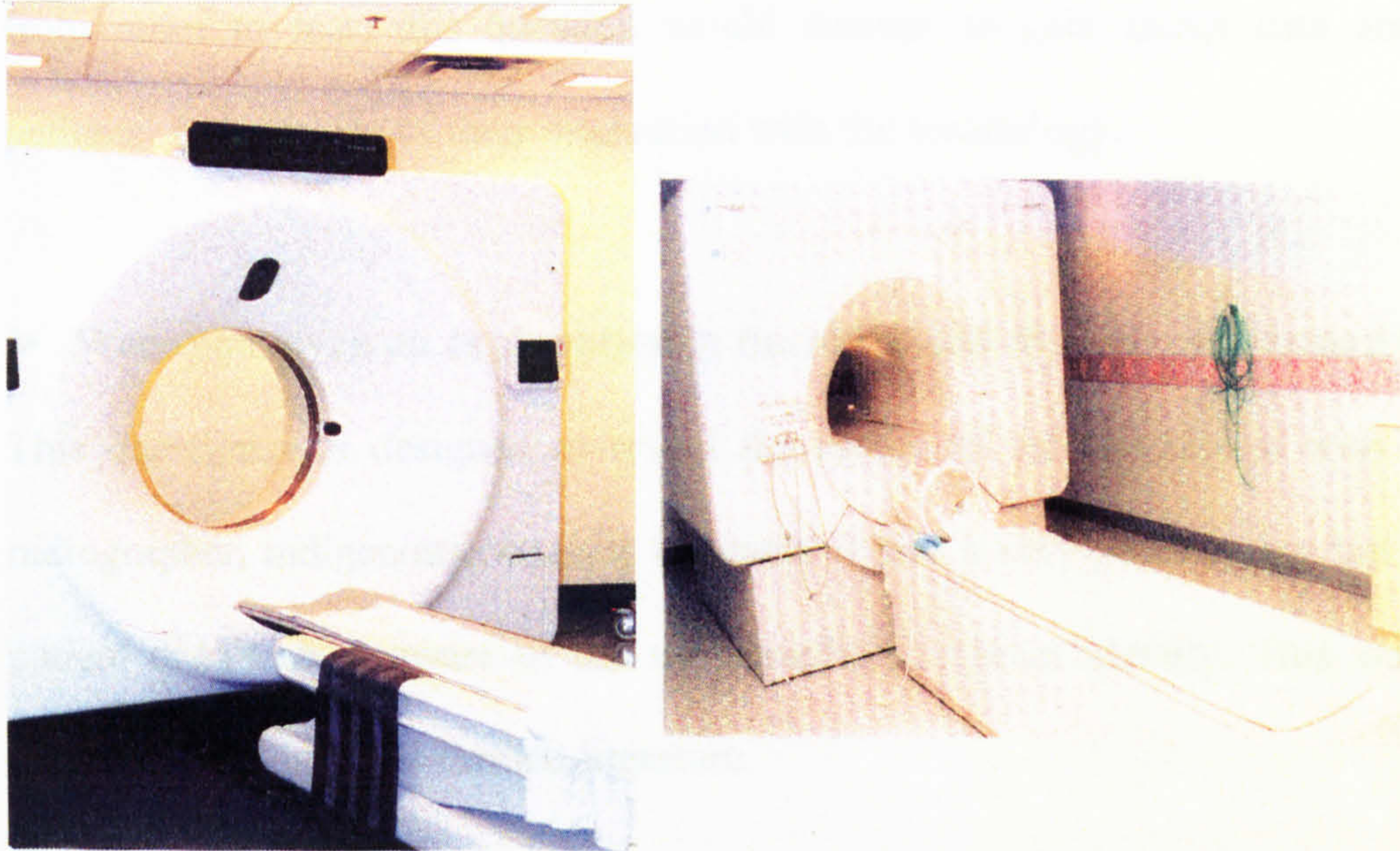
At the end of phase one the coding framework was further developed and rationalised following inter-rater (Allen, 2002) and researcher discussion (Appendix 7). Similar to all codes used in phase one, each additional code was defined with a memo. In the light of the patient data that emerged from phase one, the researcher grouped together codes that seemed to pertain to the same events. Like codes were clustered to form categories of similar responses. However, the codes increased in both number and complexity, mirroring the constant stream of emerging indigenous and sensitising concepts (Patton, 1990). Each concept or discovery (contents of rounded boxes) would be examined during the second phase of the study to establish if it was core or subsidiary (Strauss, 1987).

Being inductive, further codes would emerge as the data were analysed, thus permitting the essential noticing, collecting and thinking (Figure 3.5).

Redefining the Interview Questions: Phase 2

In order to explore these emerging concepts further, and following considerable reflection on phase 1, it was necessary to redefine some of the interview questions. Once again using the interview guide in table 3.0, the following questions were added:

- I am going to show you a picture (CT or MR scanner as seen below) and I would like you to tell me what the first thing is that comes to mind.



This question was asked since many patients requested an illustration of the scanner, a need to know what it looked like, and in addition various methods of communicating the scanner's physical dimensions were found in the data. Moreover, the sensitising concept of Symbolic Interactionism is based on shared meaning in communicating a symbol. The researcher wanted to know what was the symbolic significance of an imaging scanner and what did it actually represent to these patients? As discussed in the last chapter, it gave the participant the opportunity to talk about a picture in their own terms; 'they are not restricted to scales or other types of closed-ended responses' (Bender et al, 2001, p.783).

- **What were your thoughts and feelings when you entered the scan room?**

Given the fact that the diversity of reactions when entering the room ranged from relief to fear, this question would attempt to gain richer data about patients' impressions of their interaction with the technology.

- **Were you given an explanation in the room and did you understand it?**

This question was designed to reveal the nature of the interaction with the radiographer, indigenous concepts indicated it was a very positive one but the patient didn't seem aware of the radiographers' role or identity. This was a recurrent finding in the limited literature.

Contact Summary Sheets (Miles and Huberman, 1994) (n = 11)

The data collection continued with interviews of patients immediately after a CT scan. The reporting of the findings is done in an identical manner using contact summary sheets to assimilate the importance of the individual interview (Miles and Huberman, 1994). However, the records do not highlight the codes used (as in phase 1) in order to facilitate more description of the emerging concepts and some constant comparison (Glaser and Strauss, 1967). The complete coded transcripts are available for reference (Appendix 7).

CTFEM8(2)

This 76 year old female had presented for her first CT scan. She didn't appear to know what to expect, although she had, like many others before her, assumed the scanner was closed in. She expressed her initial fears by wishing

that she would 'not have to go through it' (line 10) (when shown the picture by the researcher) showing once more that direction and orientation are important considerations when entering into the scanner. Overall this patient disclosed no particular problems. She used many non-verbal expressions to make her points more clearly and some, although not all, are noted in the transcript. There was an expectation of a 'dark room or hole' (line 16) (from media influences) into which she would be placed, but upon seeing the scanner there was obvious relief.

She compared the experience to her fear of flying and stated that if she coped with that then she could manage this event. Her way of dealing with this, or her 'coping strategy,' was to close her eyes almost automatically. The interaction with the radiographer was positive and clear, 'she [radiographer] put me at my ease straightaway' (line 28) she declared. In addition, any concerns about her physical preparation were dealt with efficiently by the staff.

The only information she received before the scan came from her doctor who merely informed her that she would be having a scan. Her desire to fully comply with the instructions during the scan were evident, 'I usually do as I am told' (line 54) she said in a submissive tone. She gave a good explanation of the procedure but then surprisingly demonstrated a low level of knowledge. Unlike any previous interviewee, this female patient had the opportunity to ask a radiographer about the scan beforehand (grand-daughter) but interestingly she didn't feel that this would have been of any great benefit.

CTFEM9(2)

This interview clearly demonstrated that for many patients the experience of a CT scan is a straightforward event with few complications. For this woman the picture brought to mind a 'washer'. The photograph used was that of the scanner which she had just emerged from but she clearly didn't recognise it as such. She had expected to 'go in one end and out the other' (line 11), once again reflecting a conveyor-belt type of process. She was very satisfied with her experience, just a little uncomfortable in having to maintain her (physical-self) position. For the first time in the study, information was given by a medic that described the procedure to the patient in any detail, and this was supplemented by the normal information leaflet. She clearly was not worried by the experience and her relationship with the radiographer was a good one, although she did leave the room without explaining first. This patient did not feel isolated in any way by this temporary lapse in communication, her philosophical approach was to 'just get on with it' (line 43). Her knowledge of the technology was mixed, while she appreciated it was using x-radiation, she confused the process with radio (waves) perhaps pertaining to MR technology. Being completely satisfied she felt unable to offer any recommendations.

CTFEM10(2)

This rather confused 69 year-old female demonstrated the importance of patient care in a high technology environment. The equipment did not appear to concern her too much; she recognised that it moved her into the bore of the scanner but had no further comment on it. Her main concern, and quite rightly, was that of self-respect. With contrast 'leaking' from several bodily cavities

her concern and that of the radiographers was care and dignity. She had expected the same procedure as her husband, he told her that there was 'nothing to it' (line 13) but this was a very different type of examination to the one he had experienced and highlights the dangers of 'lay information.' Her praise for the radiographers was the main focus of the interview, 'I think she [radiographer] felt sorry for me and that's what's you need' (line 39) she reported, suggesting this empathy for patients is very important. At one stage the radiographer comforted her by placing a hand onto her arm, a soothing technique (De Cann, 1988) that didn't go unnoticed by the patient. Although this interview was terminated early since this patient was, at times struggling to speak, her overall impression was one of 'wonderful equipment' (line 17) and very caring staff.

CTFEM11(2A)

When a nurse attends for a CT scan there is an assumption that they will be more aware of the procedure than the general public, this however is not always the case. This 23 year-old female nurse based her preconceptions around a scanner seen on television, 'it's just like a picture of it I have in my head' (line 14) she said, although admittedly the procedure was as expected, with no surprises, and her explanation (which would be more likely to be conveyed to other patients since she was a nurse) was a reasonably accurate account. What was particularly interesting with this interviewee were her thoughts while in the scanner. They focussed entirely on watching the behaviour of the radiographers. Being physically separated didn't seem to bother her too much but trying to understand what the radiographers were

doing did cause her concern. She expressed apprehension at what the radiographers may have found and, out of fear, did not question why additional scans were being taken. She had tried to comprehend what was going on, and had wondered if one of the radiographers was a student. She also wondered whether they were talking about her pathology or simply the technical process. These were questions running through this patient's mind. In her recommendations she suggested that someone else should be in the room, expressing empathy for others, but also critically 'someone ..to tell you what was going on' (line 42). She continued emphasising her concern over presentation of self and reductionism by stating 'they are looking inside my body but I can't see it and I'm left wondering what is going on' (lines 42-43). It appears therefore that, although satisfied with the operational procedure, there are many other issues that need to be addressed in order to understand the interaction.

CTFEM12 (2)

It was stated by the researcher in interview CTFEM10(2) that lay information may be 'dangerous' since it is not necessarily about the same procedure. Indeed this study has highlighted a few instances when this may be the case. There are however exceptions and this female was one such patient. Reflecting on the experiences of her late husband, she knew exactly what to expect, and gave an excellent summary of her technological knowledge. Her interaction with the radiographers was frequent and positive. She also clearly identified methods of coping with any experience that might be considered unpleasant. In acknowledging that her CT scan was similar to a visit to the dentist, her

coping strategy was to count down from sixty for short durations or sing hymns (since she knew all the words) for longer investigations; all of this plus the fact that her eyes were shut throughout, helped her to concentrate. In this case the impression given was one of counting to comply by not moving, rather than from concern or fear, although she did admit later that 'it's useful when I don't really want to think about what is going on' (lines 45-46). Her recommendations included reference to the duration of the scan and the fact that there were no side effects. Other radiology, included, not surprisingly, another unpleasant episode with a barium enema but on this occasion the imposing imaging technology was mentioned specifically.

CTMALE8 (2)

Once again the difficulties in interviewing patients, especially if they were a little confused, posed further problems for the interviewer. The focus of the interview was inevitably shifted away from answering the questions. However, in line with previous interviews, the information was still considered to be valuable and nevertheless contributed towards the study.

Having had a previous scan this elderly male knew roughly what to expect and coped well. He shut his eyes since he thought 'it [radiation] might damage them' (line 23). The radiographers also helped him throughout the procedure and he was very complimentary about them. His thoughts and feelings were of 'self' and what was happening to him, putting life into perspective by reflecting on his forthcoming remarriage after 55 years. Although not apparently concerned about the procedure, he recalled a traumatic event during his earlier

life while in the scanner, something he claimed he 'tried very hard not to [do]' (line 31). *This idea of reflecting on a past experience emerges in other interviews and there is also a suggestion of such cognitive thoughts in the literature. On this basis a new code was added to the codes used in phase two. 'Memories' (code 26) was defined as 'recollection of a traumatic event earlier in life.'* (Appendix 6).

CTMALE9(2)

For this 78 year-old patient, this was his first CT scan. He was expecting to have an ordinary x-ray and was quite fascinated by the technology, trying to locate the x-rays and the 'films' (line 53). His immediate reaction to the picture of the technology was one of concern and lack of information claiming 'what the hell is going to happen in here' (line 8), although, unlike many previous patients in phase 2, he did recognise the picture as a scanner. He hadn't been given any information beforehand, other than told on the ward that he was coming for a scan, 'but what the hell a scan means, I don't know' (line 21) he told me in a laughing, but clearly disapproving manner. He initially found it difficult to orientate himself in the scanner, wondering how his whole body would fit through. He found the experience quite unique, and in his explanation he told others not to worry.

CTMALE10 (2A)

The general theme with CT imaging is one that presents few problems and concerns for the majority of patients. However, once again lack of information and communication does lead to problems that may otherwise be avoided. For

this 39 year-old male this was his main complaint. He recognised the picture of the scanner but lack of detail from his doctor led him to believe it was the same scan as he had last time and ‘there was something else going to appear’ (lines 34-35). Maintaining a comfortable position during the scan was problematic and he focussed on that point in order to comply throughout the procedure. His explanation and knowledge of the equipment were equally good. Praise for the radiographers was, as ever, a major feature in the interview. He made a point of mentioning this towards the end of the interview by saying ‘I must say though that the person who was in there [scan room] was very helpful and told me what to do and everything’ (lines 72-74).

CTMALE11(2A)

This male patient claimed to have had both MR and CT scans previously and yet expected an ultrasound examination this time. The term ‘scan’ was proving to be a confusing term (Murphy, 2001b). The doctor had given him the appointment for his scan with little or no explanation. This patient did however defend the actions of the doctor, like other interviewees, by claiming that ‘they probably think I understand because I’ve had them before’ (lines 17-19). *Or do in fact patients themselves believe that they should be aware since they have had previous experience?*

His reflection upon an assumed previous MR scan, brought back memories of being hot and uncomfortable for a long period of time, but other than that he could find little difference between the two procedures. It should be noted however, that it was unknown what examinations these patients had had before,

since their medical records were not accessed by the researcher at any time. Finally, this patient showed a great deal of empathy for other patients and once again there was evidence of informal discussion within the family about the various imaging technologies.

CTMALE12(2A)

By associating the picture of the scanner with a 'washing machine' the researcher assumed that this interviewee had not recognised the symbol for what it was. However, when talking about the technology later in the interview he mentioned the term again when he said, 'you just lie on the bed that goes into the front of like a washing machine but thicker' (lines 50 -51). So perhaps he had made the association. This male patient had some media-founded preconceptions which linked in with his Star-Trek analogy. The idea of a 'long tube that your whole body goes into and rotates around me with me stuck inside' (lines 13-14) paints the picture of what he was expecting to happen, although it should be noted that he wasn't unduly concerned by this thought. Once again, he assumed that since he had had previous scans, but not CT or MR, the medical staff didn't need to give him any information, after all he declared, 'presumably they knew I had an idea' (line 24). He focussed on keeping still, and since this was becoming a regular theme in the interviews it was coded. *Code 27 'compliance' was defined as the desire of the patient to keep still and or hold their breath in order to comply with the instructions.* He described the technology quite fittingly as 'advanced medicine' outlining the confined space as 'leaning against you' (line 50). Although he couldn't see the

radiographers, that wasn't a concern, since had he lifted his head up, 'I knew they would be behind that window' (line 64).

CTMALE13 (2A)

Any criticism of the radiographers has been rare during these interviews. This interviewee however was unhappy at the level of explanation and the lack of human contact during the scan. Referring to the radiographer's explanation of the procedure he said, 'she sounded as if she didn't mean it' (line 45). Considering that he had received no other information, other than details from his mother, and some of that was factually incorrect, he coped very well and did not experience many problems. He was unaware that he was alone in the room but 'guessed' (line 34) the location of the radiographers, even though they hadn't told him they were leaving. He spoke about the difficulties of conversing with a computer and worried what would happen if something went wrong, 'I would much prefer a human being' (line 41) he declared. He expressed a good deal of empathy for others and explained the procedure well, although his statement included a reference to the poor level of patient care. 'I would also say it is pretty impersonal but try not to feel isolated by it' (lines 59-60).

Axial Coding (Burnard, 1991)

The same process of open coding followed by axial or constant comparison of data (Glaser and Strauss, 1967) was repeated for phase two of the study. Once again the interviews and codes were all activated within the Maxqda programme to reveal a comprehensive list of coded segments. These are cross-

referenced with phase two summary sheets (Appendix 9). Each code is now considered in turn.

1.0 Free codes

The age range of the interviewees was from 23 years of age to 83 years of age with a mean age of 57. There were five females and six males. For eight patients in this sample group this was their first CT scan and for the remaining three this was their second scan, although there was some confusion with CTMALE8(2). As with the other interviews recorded, there was no attempt to generalise from a small sample. It was found in phase one that previous experience didn't necessarily alter expectations or allay fears and this was also the case for some of these interviewees (CTMALE11(2A)).

2.0 Concerns

Unlike phase one, all the concerns tended to be of a minor nature. The images that patients held in their minds continued to be very powerful and were often, particularly if negative, of concern to them. Some felt the scanner was 'closed in' and 'dark' (CTFEM8(2), CTMALE12(2A)). The position of the patient within the scanner, will be considered later within code 24 (orientation), but nevertheless immediate concerns noted that the position to be maintained in the CT scan was awkward (CTFEM9(2A)) and even with past experience the last thing some expected was to be placed inside the machine (CTMALE10(2A)). One patient was concerned about the risk from radiation, a surprisingly rare finding. He said, 'hang on they [radiographers] are putting me in danger here'

(CTMALE12(2A), lines 56-57) but did then balance his statement by acknowledging the reasons.

3.0 Expectations

Expectations centred around the thought of having an MR scan (CTFEM9(2A); CTFEM10(2A); CTFEM8(2); CTMALE12(2A); CTMALE13(2A)). However, some patients, noticeably all males, expected to have a range of examinations from ordinary x-rays (CTMALE9(2)), through to an isotope bone scan (CTMALE10(2A)) or an ultrasound examination (CTMALE11(2A)). The image of a dark tunnel was expressed with reference to a conveyor-belt type of process (CTFEM9(2A)) and a worrying comment, where the influence of the media was obvious, of 'I was sure it was a black hole' (CTFEM8(2) line 75). The same patient did however state earlier that she didn't really know what to expect but she was nevertheless dreading the experience (line 15). CTMALE13(2A) claimed he knew what to expect, but was surprised by the intravenous injection, with no formal information given to him he was clearly anticipating the same procedure as his mother, who presumably didn't have an injection during her scan. The need for accurate information was becoming very plain.

4.0 Feelings

Not surprisingly, with fewer concerns within this sample, it was with pleasure that the researcher was able to report that feelings tended to be positive rather than negative about the imaging procedure. 'It didn't concern me' and 'I wasn't scared or anything like that' (CTMALE12(2A), line 19 and

CTFEM9(2A), line 25 respectively) being typical comments. There were some minor reports of awkwardness or being uncomfortable (CTFEM(2A)) but again, even this patient stressed that they were not bothered by the procedure. Maintaining an ambient body temperature seemed to be a factor with a couple of patients feeling either cold (CTMALE13(2A)) or hot (CTMALE11(2A)). On one occasion the blanking out of any feelings appeared to help this particular patient. One isolated comment (CTMALE11(2A)) was notably negative. Speaking about his scan this patient described the process as impersonal and isolated. This was a significant statement that would be explored further in the remaining interviews.

5.0 Information

For those that did receive an information sheet, it was found to be useful (CTFEM9(2A)). However, many didn't receive the sheet, and the information from others was varied and often inaccurate. Some patients had no information at all before the scan (CTMALE13(2A); CTFEM8(2); CTMALE12(2A)) and one particular patient requested some prior information so that he would know what to expect (CTMALE10(2A)). Information that came from other sources was generally from medical rather than nursing staff. 'They just said CT scan' or 'my doctor said you are going for a scan,' (CTMALE12(2A), line 21 and CTMALE10(2A), lines 66-67 respectively) was often the full extent of the information provided. However, more descriptive explanations were noted within the sample; one in particular differentiated between x-rays and MR, giving examples of what each could detect (CTFEM9(2A)). Perhaps the most interesting finding within this code was that of assumptions,

(CTMALE11(2A), CTMALE12(2A)) where the doctor assumes the patient already knows and the patient assumes they should know if they have had one before. This emerging concept was located in phase one and continued to be a dominant factor. In the latter interview, the patient told the researcher that he nodded in agreement when informed of his scan, with no other information he said 'presumably they [medical staff] knew I had an idea [what they were talking about]' (line 24).

6.0 Knowledge (Mathers et al, 1999)

The high level of lay knowledge continued to surprise the researcher, I had expected a reasonable understanding but some explanations demonstrated detailed facts. Statements such as '[the] x-ray that is fed into a computer and the computer digitises it' (CTMALE12(2A), line 66) being the best example of the extent of lay knowledge. Only one patient showed confusion with respect to the technology by assuming 'radio something' (CTFEM9(2A)) was involved in the CT process. References to key terms such as 'sections,' 'x-rays,' and 'positioning' (CTMALE11(2A); CTMALE12(2A); CTMALE11(2A)) were commonplace in the data.

7.0 Misconceptions

It was equally pleasing to note few misconceptions. The main problem was that of thinking the scanner was closed in at both ends and that the patient would enter into a dark hole.

8.0 This code was merged with Satisfaction (code 12).

9.0 Other Radiology (La Masurier, 1997)

Ultrasound was a more frequent examination in this sample, but no problems or difficulties were experienced with this modality. However, in line with previous interviews, the barium enema was described as 'uncomfortable and embarrassing' (CTFEM12(2), line 129). Two patients (CTFEM11(2A) and CTFEM9(2A)) also expressed some mild discomfort when having normal x-rays for their sinuses, the projections here require the patient to press their face against the x-ray equipment for a short period of time. Virtually all the group had had previous x-rays and many described their experiences as 'straightforward' (CTFEM9(2A)), or with 'no problems' (CTMALE10(2A)). These radiological investigations certainly didn't appear to carry the same symbolic significance for these patients as the high technology imaging procedures.

10.0 Reaction in the scanner

This code was largely becoming redundant, being divided into more specific and sophisticated codes such as communication, coping strategies, and orientation that ultimately lead to the emergence of concepts. The only two points coded, were a reference towards doing as instructed (CTFEM8(2)) and 'singing hymns' to take their mind off the technology (CTFEM12(2), line 56).

11. Recommendations

It was noted that seven interviewees did not think that anything could improve the service provided. They were satisfied with the imaging experience and didn't feel any changes were required. Two interviewees requested some

human contact, to explain further (CTMALE10(2A)) or to actually be in the room with them throughout the scan, since it 'could be quite frightening for some people on their own' remarked the patient (CTFEM11(2A), lines 41-42). The remaining two (CTFEM12(2) and CTMALE9(2)), thought that more information beforehand would help to alleviate some fears although the comment 'it would be best to know beforehand, especially women because they are a bit timid' (line 75) from the latter interviewee could be construed as sexist.

12.0 Satisfaction

The level of patient satisfaction was very high, reflecting the degree of patient care throughout the imaging procedure. Praise for the radiographers was noted again with typical comments such as 'I have been well treated' (CTMALE8, line 40) being frequent. There was also a degree of satisfaction with the equipment CTFEM10(2A) describing it as 'wonderful.' Patients were pleased with different aspects of the experience and overall many, including CTMALE12(2A), considered the scan to be easy and straightforward. The only patient that did not approve of the scan was CTMALE13(2A). Unfortunately he thought that the experience was 'pretty impersonal' (line 60) and thought that more things should have been explained.

13.0 Explanation (Charon, 2001)

Overall the explanations given were very positive and reassuring, demonstrating a great deal of empathy for others. Words of comfort such as 'do not worry' usually formed some part of the explanation (CTFEM10(2A))

and CTMALE8(2)). Technical terms were virtually absent within the explanations with lay words being used to convey meaning throughout. Other explanations were quite pragmatic in their approach, ‘just get on with it’ (CTFEM9(2A) line 43) or ‘just lie very still’ (CTFEM8(2), line 61) being examples. The frequent use of the word ‘just,’ implying that the task is easy to accomplish. There were however a couple of explanations that could cause concern; for instance, it would not encourage another patient to attend if they were told ‘it is pretty impersonal and try not to be isolated’ (CTMALE13(2A), lines 59-60). In addition, the careless use of language could also be damaging, ‘x-rays leaning against you’ (CTMALE12(2A), line 50) or as a few patients mentioned the whole of your body goes into the machine, would, I suggest, give people the wrong impression.

14.0 Analogies (Hunter et al, 2002)

There were few analogies mentioned with only five patients relating the experience to anything else in life. *The researcher added the words; ‘however strange or bizarre’ to the question in order not to restrict the range of possible analogies.* The fact that there were so few analogies reflects the uniqueness of the imaging procedure. CTMALE9(2) summed up this feeling when he said ‘no, I have never experienced anything like it, nothing remotely like it’ (lines 37-39). Two patients (CTMALE13(2A) and CTFEM11(2A)) thought the experience was similar to having a normal x-ray, since you ‘are in a room with a machine sort of thing and holding my breath’ (CTMALE13(2A), line 49-50). The only other analogies were related to common phobias, that was fear of flying (CTFEM8(2)) and a visit to the dentist (CTFEM12(2)). None of these

patients used analogies or metaphors to express their meaning, analogies were only mentioned in answer to the direct question.

15.0 Communication (Murray and Stanton, 1998)

Recognising what should be coded as communication was a difficult task. Direct verbal communication was straightforward but non-verbal could be very misleading (Begley, 1996). Despite early efforts to record non-verbal communication, as part of the interview transcripts, this was largely abandoned as the research progressed. Therefore only clear 'more obvious' forms of communication were noted. Although the radiographers were complimented throughout this study for their level of patient care and in particular their ability to place patients at ease, there was nevertheless some cause for concern in the way in which information was conveyed. Both CTMALE11(2A) and CTMALE13(2A) found the use of the automated breathing instructions and communication via a microphone to be unusual, with the latter patient saying 'I couldn't or didn't want to speak back to a computer' (lines 41-42). CTFEM12(2) lost contact with the radiographers when they left the room without informing the patient of their whereabouts. The patient only knew 'they [radiographers] weren't in the room' (line 99). Most patients were aware that the staff were observing them but they couldn't confirm this due to their position inside the scanner. However, even when visual contact was made CTFEM11(2A) tried to make sense of her observations; two radiographers looking and pointing at a screen could only mean one thing for this patient, she thought, 'oh god they have probably found something' (lines 23-24).

16.0 Control

This code did not feature at all within this CT sample. It was introduced as an emerging theme from phase one, and MR interviews in particular. The fact that it does not feature confirms once again that there was a high level of patient satisfaction. One example of this was CTFEM10(2A) who, even though she could not see anything, felt she remained 'in control' by being reassured that 'they [radiographers] would be close by' (line 30). For those that did have concerns the most effective method of keeping control appeared to be by the use of coping strategies which are now discussed.

17.0 Coping strategies (O'Connor and Cotter, 1998; Ward, 1999)

Five patients did not feel it necessary to develop any form of coping strategy to enable them to complete their scans. Of those that did, closing of eyes was again the most common technique, although CTMALE(2) closed his eyes to avoid possible damage from radiation this was not classified as a coping strategy according to the definition in the code memo. CTMALE13(2A) was instructed to close his eyes, but was unsure why this might assist him. CTFEM8(2) preferred a more traditional form of sedation, by taking a tablet beforehand, while CTMALE10(2A) found that focussing on keeping still was useful, 'I didn't have any other thoughts, I just kept thinking I must keep still' (lines 51-52) he said. The most interesting technique was that of CTFEM12(2A) who counted and sung hymns to herself while inside the scanner. She had a distinct strategy and used it in other situations, which she found stressful, such as the dentist.

18.0 Symbolic Significance (Mead, 1934; Blumer 1969)

This code was defined as the pictorial representation and impact of seeing the scanner (Berg, 1999, Charon, 2001) in order to elucidate meaning of what the technology epitomized for these patients. The fact that several interviewees (CTFEM12(2A), CTFEM10(2A), CTMALE8(2)) failed to recognise the picture for what it was, the scanner they had only just emerged from, was an unexpected finding. The image presented to the patients conjured up a range of strange responses including ‘washing machines,’ ‘toilets,’ ‘porthole’ or ‘round-hole,’ all demonstrating that it meant different things to different people. The influence of other people was apparent in forming an ‘image’ of the equipment but this often conflicted with the reality (CTMALE12(2A), CTMALE13(2A)). Of particular interest was the opinion of CTMALE9(2), to this individual the picture did not even represent an inanimate object, but rather, a fear of ‘what the hell is going to happen in here?’ (line 8).

19.0 Isolation

It was evident that only a few patients admitted that they felt isolated by the experience. Being aware of the radiographers’ remote presence provided some reassurance. Nevertheless, this argument was not always convincing as CTMALE13(2A), who also spoke of being alone, declared, ‘I guessed they [radiographers] would be there’ (line 34). A couple of patients (CTFEM12(2) and CTFEM9(2A)) did feel an element of isolation; the radiographers apparently had not informed them they were leaving the room.

20.0 Perceptions of Radiographers

This segment of data hoped to ascertain the extent to which the patient interacted with, and understood the role of the radiographer. Given the level of satisfaction already noted for CT it was likely that the radiographers would be viewed in a very positive light. This was indeed the case. Many made a point of mentioning the helpfulness and caring attitude of the staff (CTMALE10(2A), CTMALE8(2) amongst others) and described their role as reassuring and helpful in positioning them in the scanner. Regarding the negative aspects, although they were few, not making clear that they were leaving the room, and not emphasising where they would be did cause some concern (CTFEM9(2A) and CTFEM12(2)). CTMALE13(2A) was critical of the radiographers for not communicating with him, he felt worried that he was completely alone with the technology and thought the radiographers had no further part to play. He said with concern 'what if I got it wrong, would they [radiographers] know or would it be that computer' (lines 42-43).

21.0 Moulding preconceptions (Charon, 2001)

The issue of just who, and what, were responsible for generating preconceptions unearthed a complex variety of sources. Ideas about what was going to happen were not always declared or easy to locate within the data. Those that were recorded a clear link to the media, especially television. Other preconceptions came from family members and medical staff (CTMALE9(2), CTFEM12(2), CTFEM10(2A)). It should be noted however that the information given from others was not always misleading or incorrect and on occasion it was preferred to the patient information leaflet (CTFEM11(2A)).

This particular patient 'knew the layout' (line 12) from images on television and a model of a scanner on a children's ward. Finally, CTMALE9(2) who didn't appear to have been influenced to any extent by others and claimed that he had received no information, suggested that he would tell future patients about his experiences. The fact that he had an injection would, he declared, mean 'they are sure not to come' (line 66). This fact would then presumably act as a type of self-fulfilling prophecy.

22.0 Stories (Lupton, 1994)

This code was intentionally selective, and for CT interviews in particular, there were no stories that described previous incidents of CT scanning. The only coded segment for this sample came from CT2AFEM10 whose husband had told her 'there is nothing to it' (line 13), but 'it' turned out to be a different type of CT examination, thus showing how even simple, apparently helpful facts, can turn out to be misleading.

23.0 Self (Simon, 1999; Shannon and O'Connor, 2000)

The findings within this code were very interesting, although the transcripts had to be read several times, and it was only when they were read in conjunction with sensitising concepts, that segments become apparent. Self was considered within three different but associated categories. There had to be an association since humans move in and out of many different selves during any interaction (Charon, 2001).

Resignation of Self

These incidents could also be labelled 'submissive self' since patients concluded that they had no control over what was happening to them. CTFEM8(2) stated with respect to her scan, 'If I have to have it done, I have to have it done' (lines 73-74) and confirmed this attitude when she said ' I usually do as I am told' (line 54). Other examples include CTMALE10(2A), who despite feeling pain in the awkward position he was trying to maintain, spoke of how 'it has to be done' (line 46) and never mentioned his dilemma to the radiographers. The final example of 'resigned self' is evident in the interview with CTMALE12(2A) who didn't really know what to expect and yet when the doctors were talking to him he told me that he nodded in agreement but had little idea what they meant. He continued by saying, 'I suppose that I could have got the information if I had asked for it' (lines 22-23). An alternative explanation for the two latter patients, both males, could be that they were hiding their true 'self' in order to present the expected 'male image' which is referred to in the literature and is discussed in subsequent chapters.

Physical Self

These segments illustrated occasions when the physical self was challenged in some way by the procedure; 'I was struggling to keep in that position' (CTFEM9(2A), line 30) being an example. CTFEM10(2A) and CTFEM12(2) both felt embarrassed by their examinations, with respect to the contrast in her rectum CTFEM10(2A) said, 'I was praying that I hope this stuff [contrast] doesn't come out of my bottom' (line 28). For CTMALE13(2A) the procedure was impersonal and he felt physically isolated by the experience. The impact

of technology on self was also emerging, CTMALE9(2) described his physical interaction with the CT scanner as follows:

'I didn't know what to think. I didn't say anything but I thought if it [scanner] comes much further in then I will have to shout and say something you know'

(lines 45-47)

This portion of the transcript also has elements of resigned self within it.

Questioning Self

CTFEM11(2A) observed the radiographers throughout her procedure and continually questioned what was happening and wondered if the staff (behind the window) were talking about her. She referred to medical reductionism, and the fact that she could not see what was happening, possibly expressing feelings of objectification.

24.0 Orientation

Unlike phase one, and in particular MR interviews, there were few references to the position of the patient entering the scanner. The only two of note within this sample were CTMALE9(2), who was concerned at how the radiographers were going to get him through the 'hole' (line 42), and CTMALE10(2A), as mentioned previously, found his position uncomfortable.

25.0 Technological Association

This code was defined in a Maxqda memo as: specific instances that relate to the interaction with technology, and several were identified in the CT sample.

CTEFEM10(2A); CTMALE8(2); CTMALE9(2); CTMALE12(2A);

CTMALE13(2A) all recognised the importance of the sophisticated technology referring to it as wonderful, fascinating equipment that formed part of advanced medicine. CTMALE8(2) in particular showed his appreciation for the diagnostic capabilities of the scanner, he knew little about its functionality but more importantly in his opinion, he ‘accept[ed] it for what it does, and it does to me’ (line 38). On the other hand CTMALE 10(2A) was a little cautious about the scanner, expecting ‘something else to appear’ (lines 34-35) (unexplained), while CTMALE11(2A) worried about fitting into the machine, a feeling more often associated with MR. Finally, CTMALE13(2A) referred to the CT scanner as a ‘big monstrosity’ (line 55).

26.0 Memories (Luck et al, 2000)

Memories relating back to earlier significant events were rarely found. CTMALE12(2A) spoke about how the computerised technology reminded him of childhood memories as a science-fiction fan, while CTFEM12(2A) remembered using the same coping strategies on previous visits to the dentist. Just how significant these memories were was impossible to predict. The most dramatic memory was the traumatic war-fare memories recalled, against his (CTMALE8(2)) wishes whilst having a particularly unpleasant time in the CT scanner.

27.0 Compliance

There was a willingness to comply evident in all the CT interviews in phase two, but specific actions taken in order to adhere to instructions were the only segments coded. CTFEM8(2) and CTMALE13(2A) were always prepared to

do as instructed. CTMALE10(2A), despite being in pain, still maintained his position in the scanner, since 'it has to be done' (line 46). Finally, CTMALE12(2A) made a point of complying since he considered that it was much to his own benefit to do so; 'I had to do my best and hold my breath and things and follow instructions so that it comes out clear. I hoped this would give them a more positive picture' (lines 35-38) he said.

Summary of CT (phase two) data

Once again CT examinations generated fewer problems than those in MR. Only very minor complaints were made by this sample of patients, and as in phase one, a high proportion were expecting an MR scan. There was a lack of information before the procedure and several assumptions made by medical staff as to what, if anything, should be conveyed to the patient. Some patients also assumed that since they had had 'scans' before, they did not need further details. Three types of 'self' were acknowledged and many patients failed to recognise the picture of the CT scanner for what it was. Although different types of 'self' were noted within the literature review, the extent and fluidity of 'self' was quite unexpected. The varied response indicated that it had a distinctive meaning for individuals. This unique representation fits with one of the basic assumptions of Symbolic Interactionism (Mead, 1934, Blumer, 1969). The picture also represented fear and uncertainty for some interviewees. Human contact and the lack of it were also important, especially when the radiographers disappeared. This did present a few difficulties. This limited contact time between the radiographer and the patient (Reeves, 1999) continued to be problematic. Radiographers were singled out once again for

praise, but they were not named by title or their role mentioned beyond positioning and explanation. Patient memories were very rare but one in particular was very traumatic.

Implications for practice

Medical staff require a more comprehensive understanding of what the imaging procedure entails. Radiographers need to be aware of the fact that for the patient a CT or MR scan can produce feelings of isolation. Finally, radiographers need to take on the responsibility of identifying themselves to all patients.

Implications for future research

The nature of coping strategies and self in order to maintain respect and dignity during these procedures requires rigorous anthropological investigation.

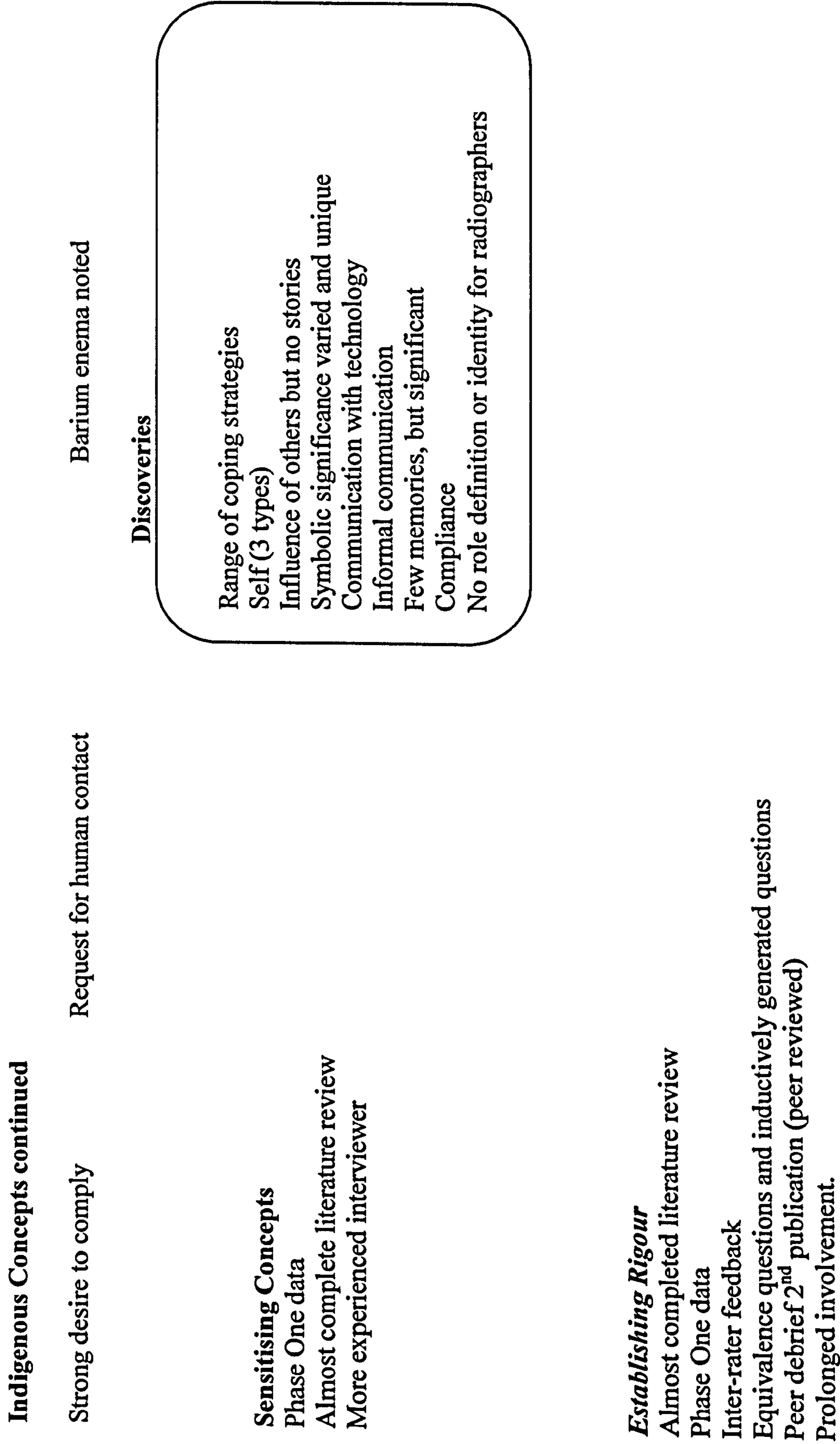
Explanation of Figure 4.2 (overleaf)

Figure 4.2 illustrates the findings from this section of data in an identical format to the previous figures in this chapter. The means of establishing rigour are seen to be numerous and there are many common concepts. The discoveries focus on communication and coping.

Figure 4.2 Phase Two CT Results

Phase Two CT interviews		Sample (n=11) mean 57 years																		
Codes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Indigenous Concepts																				
Expectation of MR				Very satisfied			Lay terms (to convey meaning)													Influence of others and media creating an image in patients' minds
Empathy for others				Radiographers praised, but role not mentioned			Good level of knowledge													Lack of information assumptions made
Fear of technology				Isolation/trapped			Previous scans not always useful													Feeling embarrassment/impersonal
Conveyor- belt technology				Closed in black hole			Few analogies													Few recommendations

Figure 4.2 Phase Two CT results



Section Four (Phase Two). MR Results

Contact Summary Sheets (Miles and Huberman, 1994) (n = 13)

MRFEM10(2A)

This was the 2nd MR scan for this 38 year-old female. She knew what to expect and this probably restricted the amount of information given to her by her doctors, since she told him that she 'had a pretty good idea of what to expect' (line 18). She found the whole experience 'restful' (line 22) and thought the communication via the microphone was an important feature of the scan, 'it helps a lot to know that somebody is there' (lines 27-28) she declared. Although she agreed that the analogy of the tunnel was realistic, she preferred to say that the experience was very different and not similar to anything else. Interestingly, her interaction with other patients was reassuring and seemed to have placed the other patient at ease. *This frequent questioning and discussion between patients does, in most cases appear to be effective, provided that the correct information is given. This indigenous concept will be referred to as 'networking' and is explored further in the chapter.*

The knowledge of this patient was very good indeed despite the usual initial denial of any acquaintance with the equipment. Her recommendations were unique in themselves, suggesting a colourful machine, so that the white, clinical appearance wasn't as frightening.

MRFEM11(2A)

This was an interesting interview for a couple of reasons; firstly, this young female admitted that she hadn't read all the information sent to her, then proclaimed it was not 'very informative' (line 10) and then later, complained that she hadn't been 'pre-warned' (line 63), thereby contradicting herself. Because of this she was clearly expecting 'a scan, like you have when you have a baby' (lines 8-9), that is, an ultrasound. Secondly, her relationship between technology and self was a negative one, she was fearful of having to enter the tunnel, 'it was a bit daunting (line 18) and she felt isolated, 'I wouldn't like to be in there on my own with that' [scanner] (line 56) she stated. She questioned how she would have coped if other areas of her body had to be placed into the scanner, in particular her head, and how she could escape from the machine. Once again, this idea of being completely encapsulated was evident. These feelings were however somewhat diluted since she had control with the emergency button. Her knowledge of the technology was rather poor.

MRFEM12(2A)

This female had to be sedated in order to complete her MR examination. She had tried briefly the day before, but unfortunately had to terminate the scan after only a few minutes. The main problem seemed to stem from powerful stories from 'others' making her 'terrified before [she] went along to the department' (lines 13-14). Coming direct from the Accident and Emergency department, she had no prior information, but clearly the memories of those stories were her lasting impression of the procedure. Despite the fact that the radiographers had explained everything to her, she said 'no I can't do it' (line

22) and she considered that even 10 minutes was a long time if 'terrified' (line 31), although her sister-in-law, who had received a video-tape about the procedure (a practice not carried out at either of these departments) had found the experience even worse. This example, plus the comments made by the previous interviewee, once again questions the value of patient information in radiology department. It was interesting that she considered the CT scanner to be more intimidating due to its larger size, this represented an exception to the rule in the sample. There were many reflections on 'self' and maintaining control, this was maintained by closing her eyes and being in possession of the emergency button. She was so convinced of the effectiveness of closing her eyes that she claimed had she closed them she would have been able to complete the scan. Communication with the radiographers was always positive and she seemed reassured when the radiographer told her that 'if you panic, I will watch you' (line 56). This probably reduced her feelings of isolation. In addition, the fact that, somebody would be 'present to bring you out' (line 73) gave her further confidence. Her knowledge had recently been updated following a conversation with her son, but she would rather have been told after, not before, the event. Certainly the stories had had a significant impact upon her. The experiences of this woman were summed up half-way through the event:

'The point is that I don't consider myself to be claustrophobic, and I know that's why some people don't like it, but I do think that it's more what other people tell you than actually was...you know, the experience itself.'

(lines 66-68).

MRMALE3 (2A)

This 57 year-old patient, with no information beforehand, clearly didn't know what to expect for his first MR scan. He didn't recognise the picture of the scanner and thought he would be in a room with someone else next to him. His immediate reaction was to 'get up quick' (line 12). He claimed however not to be worried or frightened at any stage but used language that would suggest otherwise; 'it's a bit frightening really' (line 11), 'that's the scary part where you can't see anything' (line 69), and 'I thought I was going to get squashed' (line 91). Parallels with MRMALE1 in phase one of the study can be drawn. Evidence of patient networking was again apparent, this time the man in the next bed telling this interviewee, 'you get locked in this tunnel and it's very scary at times' (line 84). His feeling of isolation was very marked, thinking on a couple of occasions that the radiographer had actually gone home and left him. At the end of the interview he revealed some additional information (Patton, 1990) that demonstrated how little he knew and the extent of his concern, he said 'they don't explain to you what's involved, you know I was in the dark' (line 78).

MRMALE4(2A)

With numerous CT and radiotherapy scans beforehand this 51 year-old male was very well practiced with coping strategies. He had expected to have a CT scan, even though he had received an information leaflet. He had made an assumption that he would be sitting up for his scan which is rarely the case for these particular imaging modalities. He revealed that he counted forwards and then in reverse to help him comply with instructions and to stop himself from

panicking. 'I get more relaxed by counting' (line 40) he said. His previous experience in radiotherapy had been a harrowing one, he claimed it was like 'having a very tight glove fitted ...then clamped, you can't move your head at all, not even a fraction' (lines 51-52). Interestingly though, he also felt that he had learnt from the experience and that enabled him to cope with these other procedures.

No other accounts of radiotherapy interactions have been recorded but it appears that this other field of radiography may also require investigation. It is however, outside the scope of this particular study.

The existence of patient networking was not only confirmed, but made official, by deliberately asking patients to explain the procedure to each other. *This was a new discovery for the researcher.* The networking was however selective, 'I mean you don't use a patient that's in a bad state, you use a patient that's been okay' (line 65) the researcher was told. What is still unclear is whether the radiographers, nurses, or patients themselves instigated this networking. The benefit, if done correctly, was that 'if they felt good about it themselves then they put you more at ease' (line 66). Finally, there was some evidence of isolation since this patient preferred someone, and indeed expected someone, to talk to him throughout the procedure. In addition, he seemed unaware where the radiographers had gone, although he did note that 'sometimes there's a window' (line 95).

MRMALE5(2A)

The powerful networking of others was once again evident in this interview. Although he had received information, the explanation he understood came about as a result of 'people who have experienced one before' (line 17) even if, as he acknowledged, it wasn't for the same thing. He considered the whole process to be rapid, 'one minute I am lying in bed, the next I am inside this machine, I felt as everything was on top of me' (lines 18-19) he said. He hadn't expected the loud noise but like previous interviewees he was not perturbed by it either. He assessed the scanner before getting into it, questioning the narrow bore size and the mechanics of the process. Relief then replaced slight apprehension, he said 'Once I realised that I wasn't going to be stuck in the middle of it the feeling of claustrophobia left really, it wasn't that bad' (line 51-52). Control was gained with the presence of the emergency button. This male patient compared the experience to that of 'potholing' where the confined spaces are similar. Although he had little idea of the functionality of the equipment he was very perceptive in noting that the technology did not use x-radiation since the radiographers did not wear protective clothing.

MRMALE6(2A)

This patient stated that the experience wasn't too different to what he had expected. He made a point of asking the receptionist about the scan, this was not the first time that this grade of staff had been approached for information, the other being in the general hospital. He found the experience interesting, comparing it with the 'image' portrayed on the television. Although this patient felt slightly closed in, he admitted to being 'more bored than alarmed'

(line 24). Striking analogies were introduced, such as escaping from a prison camp and having the opposite feelings to the freedom gained from a bicycle ride, but when asked directly about analogies he claimed it was 'a one off, completely unique' (line 30). He thought that the technology was 'physically threatening' (line 44) but like previous interviewees did not worry about the loud noise.

MRMALE7(2A)

It became apparent that this young man had received information beforehand but had been too busy to read it. He preferred to, as he stated 'to take whatever I get' (line 61) and despite three previous MR scans he admitted that he thought he had come for an ultrasound scan. Although he didn't feel disturbed by the experience he did express his relief at the end of the examination, describing the feeling of freedom as similar to jumping out of a plane. Lack of communication was suggested but not directly highlighted as a factor. He claimed to have lost the sense of time during the scan and he mentioned this point on a couple of occasions. *This loss of time has been noted on a few other interviews but its significance is unclear.* He didn't mention being isolated but said the experience on hearing the door slam, as the radiographers left him, was like 'being in jail' (line 42). Finally, this gentleman was particularly fascinated by the functionality of the equipment; although he demonstrated a poor level of knowledge, he was very keen to work out how the technology worked, especially the noise element.

MRMALE8(2A)

This 53 year-old male was relaxed and fully aware of what to expect. He had three previous CT and four MR scans, so he had plenty of experience with imaging technology. He approved of the information leaflet but also considered it necessary to have someone to talk to during the procedure. He was however still influenced by the symbolic nature of the scanner portrayed by the media, a representation that, after so many scans, one would have been expected to have faded. The radiographers, who once again were praised for their caring skills, 'placed him in the scanner a bit at a time and then back out again, until [he] got used to it' (line 23-24). This strategy, together with closing his eyes, and being in possession of the emergency button, certainly worked for this particular patient. The noise of the scanner, which was mentioned on a regular basis, appeared to make patients curious as to the workings of the equipment or, as in this case, fearful that something might be going wrong. This patient tried hard not to think about it. He claimed, like many others, that the experience was unique and varied from person to person, 'some people say that there is nothing to it and other people, who haven't had it, try to say, you wouldn't get me in there for a big clock' (line 37-38). Being so experienced with both imaging modalities, this patient considered that CT was easier for the patients than MR. However, overall he reflected, 'each one I've had since the first one has been fine because everything has been explained to me' (lines 68-69), showing that human communication is an essential ingredient in an otherwise technological 'recipe.'

MRMALE9(2A)

Moulding preconceptions was the most common code used when analysing this transcript. Stories from others were not vague; they were 'black and white' in nature. He was told with respect to an MR scan, 'its very traumatic when you first go in, you go in the tunnel, and that is all' (line 8) and his sister-in-law told him that she didn't like it and 'would not have another' (line 51). He agreed that it was traumatic, linking this with memories of having to wear a gas mask at the dentist, when he was a much younger man. He showed a lot of empathy for others especially those that might be claustrophobic. He coped by closing his eyes since he felt that would make the feelings of claustrophobia disappear. It was difficult to ascertain if he had received information beforehand since his wife dealt with all his correspondence, but despite the stories he had been exposed to, he didn't appear to have had a particularly unpleasant experience and he trusted the staff implicitly. His own explanation, which would in turn form the preconceptions of future patients, was mixed. He claimed it was 'frightening and restricting' (line 45) but otherwise there was nothing to worry about.

MRMALE 10 (2)

This interview was the most dramatic of all the interviews and provided a plethora of rich data. Quite unexpectedly from within a theoretical sample emerged an extreme case (Patton, 1990). This 41 year-old male had already had four MR scans but such was the level of his fears and emotions that the researcher was surprised at the depth of feeling he revealed. The fact that he was claustrophobic would account for some of his difficulties, but not all of

them. He knew what to expect and started to worry weeks, not days, before his scan. He admitted later in the interview that he had not read the patient information leaflet but he claimed 'it wouldn't matter what it said to be honest' (line 339). He felt that with experience he was learning to cope better, a point raised in a couple of other interviews. However, his emotions were still very striking and dramatic. The confusion over his request not to be kept informed of the time meant the radiographer did not communicate with him at all, as a result he was left isolated and anxious even though his partner was in the room with him. His concerns were very clear when he stated 'It's not actually what they are going to find again; my total anxiety is over the small space going into the machine and that is it fully' (lines 85-87). In addition, he described the loud noise of the scanner as torture, 'although its not physically hurting you, it is physically scaring you' (line 106). It should be noted however that this was the only patient who felt perturbed by the noise.

This man could not bring himself to look at the scanner and made a conscious effort to focus on other objects in the room. He told the researcher that the picture, shown at the beginning of the interview, was the first time he had ever seen an MR scanner properly. Even glimpses of the technology on the television scared him. Clearly this scanner symbolised fear in his mind which he tried to block out with distraction or coping strategies. In four previous scans he had never noticed where the radiographers had gone to; only that day did he look for them in the mirror and that was because he was hoping that they were on the way to 'get me out'(line 169). He also concentrated on other thoughts such as family members and music as a way of dealing with this

traumatic experience. He didn't use the previously noted method of counting since he felt that may have made him worse.

His main phobia was one of being trapped and he repeatedly mentioned his personal fear of being buried alive. In his explanation he professed that he wouldn't tell others what the experience was really like. 'If I was to tell them honestly, I would have to say that it is quite petrifying' (lines 246-249) he said. His interaction with the receptionist on his arrival only served to confirm and increase his preconceptions, when she innocently said to him 'It's awful isn't it, the space, you cannot move' (line 271-272). The recommendations were interesting with a request for constant communication throughout the procedure.

There was further evidence of networking with respect to his angiogram examination.

In conclusion, he stated that 'I will always be afraid' (line 385), and seemed very concerned as to what would happen if the scanner broke down, would they be able to get him out? However, the extent of his fears were summed up right at the end of the interview (Patton, 1990) when he declared with a degree of emotion:

*My eyes were nearly glued together, I shut them that tight
and I gripped the alarm button really tight, so I was quite
bad really.*

(lines 415-417)

MRMALE11(2)

The pictorial representation was said to be 'air-tight' (line 14) by this male patient since 'you are in a tunnel and a confined space' (lines 19-20). He was quite relaxed about the whole procedure and very grateful for the advancement of medical technology. This patient felt that the noise reminded him of a pneumatic drill, this showed once again that for most interviewees the noise was considered as loud and inconvenient, but not necessarily disturbing. He would recommend to others to 'lie back, relax, take a deep breath, close your eyes, listen to the music, and wait until it is all over' (lines 61-62). The reason for closing his eyes was to block-out the equipment which was so close to him. Several misconceptions were evident; he confused ultrasound with MR and implied that x-rays were used in his scan. Finally, the perceived human versus technology dichotomy was mentioned by this patient when he made an unclarified statement towards the end of the interview, 'it's getting the combination right. The right type of staff for the right type of machine'(lines 138-140) he said. Does this suggest that the wrong type of staff can be placed with the wrong type of machine? Certainly the combination of the two is worthy of further discussion.

MRMALE12(2)

For this 55 year-old patient, this was his first experience of an MR scan. He did appear a little reluctant to answer the questions for some reason, having previously consented happily to the interview. A few friends had told him the procedure was claustrophobic and from what he had seen he fully expected to be 'entombed' (line 44). This fact did seem to concern him since he described

his thoughts in the scanner as 'initially panic...because I do suffer from claustrophobia' (line 64). This, together with the fact that his body language was very uneasy during the interview, suggested that he was at least uncomfortable with the experience. However, he declared that 'it didn't worry me,' (line 77) and 'no problem' (line 81). These contradictory comments made it difficult, if not impossible to accurately gauge the interviewee's true feelings and emotions. The MR experience was considered to be 'unique' (line 93) and his explanation to others was encouraging.

Axial Coding (Burnard, 1991)

1.0 Free Codes

The age range of the interviewees was from 32 years of age to 75 years of age with a mean age of 54.5. There was a concerted effort to address the gender bias from phase one with 10 males and 3 females being interviewed. For eight patients in this sample, this was their first MR scan, for MRFEM10(2A) it was her second scan. Two patients MRMALE7(2A) and MRMALE11(2A) didn't have too many concerns over the scan but significantly MRMALE10(2), who was on his 4th scan, described it as a petrifying experience. This shows that previous experience, although helpful for some patients, does not always ensure that the next scanning encounter will be less of an ordeal.

2.0 Concerns

There were a range of notable concerns with three patients (MRMALE5(2A); MRMALE6(2A); MRMALE8(2A)) citing the noise as a problem.

MRMALE6(2A) didn't realise that the noise would be so 'physically threatening as that da.. da ..da' (line 44). Of a more serious nature MRMALE3(2A) and MRMALE10(2) expressed a desire to get out of the scanner, such was the extent of their concerns. MRMALE10(2), who thought he was claustrophobic, said 'I have to get my mind away from thinking that I am scared of the space' (lines 180-181) and continued later by describing the procedure as petrifying. MRMALE9(2A) and MRFEM12(2A) were both concerned before the scan, their concern initiated by stories from other people. The latter patient said significantly 'I was terrified before I even went along to the department' (lines 13-14).

3.0 Expectations

Since five patients had previous experience of an MR scan they knew what to expect. However, previous experience did not always reduce their anxiety or apprehensions, MRMALE10(2) being a prime example. One respondent (MRMALE4(2A)) expected a CT scan, which was unusual in the MR patients interviewed, two (MRMALE7(2A) and MRFEM10(2A)) anticipated having conventional x-ray examinations and one (MRFEM11(2A)) had envisaged having an ultrasound scan. The remaining patients all believed that they were about to undergo an unpleasant procedure with expectations varying from 'a great big hole' (MRMALE5(2A), line 9) to being 'physically entombed' (MRMALE12(2), line 44). The influence of 'others' was once again particularly strong in developing these expectations. MRMALE3(2A) had envisaged that someone would be in the room with him throughout the scan,

'you know to explain what is going on' (line 11) not an unusual assumption for a first attendance.

4.0 Feelings

Segments that would have been coded under 'feelings' were also indexed within other codes such as communication, isolation, and compliance, for this reason many segments of text were coded several times (Burnard, 1991). There were several patients who felt positive and calm during their scan (MRFEM11(2A); MRFEM10(2A); MRMALE12(2)) but they were in the minority. MRMALE11(2) was very thankful for the advanced technology and very pleased that something was being done for him. Others reflected on the experience using negative terms; 'it was like being in jail' (MRMALE7(2A), line 42) or being 'trapped' (MRMALE3(2A), line 33), these patients reported. However, it wasn't just the immediate ambience of being inside the scanner that produced these susceptibilities; MRMALE10(2A) who claimed to have a fear of being buried alive, associated this feeling with the scanner. He concluded that his fears might not be related to the technology per se but his own personal thoughts, 'so I suppose that it has a lot to do with it really' (lines 20-21).

5.0 Information

The majority of the sample, that is eight interviewees, had received patient information leaflets in line with phase one. MRMALE4(2A); MRMALE8(2A); MRMALE11(2) and MRMALE12(2) considered the leaflet to be useful and informative. However, MRMALE5(2A) who had the leaflet in

addition to what 'others' had told him, found the technicality of the information helpful but tended to believe both versions of events. He claimed in an assumed joking manner 'I mean at the end of the day the article [leaflet] is there to be able to do away with my fears; so they are not going to tell me that you are going to be stuck in a great hole and the whole world is going to cave in on you' (lines 31-33). MRMALE10(2) was so worked-up that he felt the leaflet was irrelevant and he did not read it, but perhaps since this was his fourth scan, he thought like MRMALE11(2) that there would be nothing new to read. The influence of 'others' was once again apparent, with doctors, receptionists and patients providing rich descriptions of the procedure. There was no further evidence of patients 'making up their own impressions' of the scan as with MRFEM4.

5.1 Descriptions (May and Fleming, 1997)

There was little ambiguity in the vocabulary of the informants 'you will get put through this great hole and you feel claustrophobic' (MRMALE5(2A), lines 9-10) or 'It's very traumatic when you first go in, you go in the tunnel' (MRMALE9(2A), line 8). Of concern to the researcher was the fact that it was not only family members or medical staff that were so influential. Narrative accounts from receptionists as mentioned previously, and other patients (also see code 22: Stories) were accepted as fact, an example being the man in the next bed who told MRMALE3(2A) 'you get locked in a tunnel' (line 82).

6.0 Knowledge (Mathers et al, 1999)

Unlike the interviewees to date in both modalities, there was a very mixed appreciation of the technology. Within this sample patients attending for their 3rd or even 4th scan showed little understanding and several misconceptions. MRMALE10(2A) on his fourth MR scan pronounced confidently that the 'noise is when they are taking the x-ray, that's my impression of it' (lines 299-300). His reluctance to read the information leaflet was perhaps reflected in his level of knowledge. MRMALE4(2A); MRMALE10(2); MRMALE11(2) also thought that the process involved x-radiation and were actively looking for x-ray films and plates. This curiosity about the scanner during the procedure had been evident throughout the study, leading MRMALE5(2A) to the conclusion that x-rays were not involved since the staff did not wear protective clothing. Some patients attending for the first time demonstrated a good understanding (MRFEM11(2A) and MRFEM12(2A)).

7.0 Misconceptions

In agreement with MR (phase-one) interviews, there was still a major misconception related to the physical appearance of the scanner (MRMALE12(2) and MRMALE6(2A)). The difference being that the catalyst for this appears to come from 'others' and their stories, rather than the media, as was the case in phase-one. The most frequent fallacy for this group was however related to lay knowledge and has been reported under that code.

8.0 As with the CT coding this code was merged with satisfaction (code 12).

9.0 Other Radiology

Four patients (MRMALE3(2A); MRMALE6(2A); MRMALE12(2); MRFEM10(2A)) reported no particular difficulties with conventional x-ray procedures although, comparatively speaking, more patients within this sample did experience problems with more invasive radiological techniques. One patient (MRMALE11(2)) noted his pain following Radiculography, which could often lead to a severe headache, the Barium Enema was once again described as 'undignified' (MRMALE5 line 76), while MRMALE10(2) described his angiogram as an 'absolute nightmare'(line 355), although unlike the MR scan the equipment itself did not trouble him. Interestingly, he also stated that the procedure was not as bad as portrayed. Apparently the patients on the ward were discussing it (networking). This, once again shows, that other radiological investigations were also deliberated and interpreted in an informal manner. The most significant response to this question came as a result of MRMALE4(2A)'s encounter with radiotherapy equipment. The MR scan was very much easier in comparison.

10.0 Reaction in the Scanner

As mentioned in the axial coding of CT interviews this code was largely becoming redundant, being divided into more specific and sophisticated codes such as communication, coping strategies, and orientation that ultimately led to the emergence of concepts. The only notable text segments were MRMALE10(2) whose reaction was one of being physically scared, and referring back to the radio-therapy experience MRMALE4(2A) graphically described his time in the scanner that 'really freaked [him] out' (line 52).

11.0 Recommendations

As with MR phase one, a few patients could not think of any recommendations, since they were very pleased with the experience MRMALE6(2A); MRMALE8(2A); MRMALE12(2)). MRMALE12(2) in particular summed up the mood when he stated 'I don't see how you can improve it' (lines 113-114). A very useful, if not currently pragmatic suggestion, made by (MRMALE3(2A) and MRMALE7(2A)), was to have a film or television playing in the scanner above their heads; this would act as a distraction from the clinical-looking equipment in such close proximity to the patient. Along similar lines was a recommendation to make the scanner more colourful (MRFEM10(2A)) a tactic that is gaining increasing popularity as mentioned in the literature review. Once again, more details on the information sheet were considered appropriate (MRMALE5(2A)). Human contact was also mentioned with a request 'to be told every now and again, it won't be long, are you alright' (MRMALE10(2), lines 317-318). Finally, the uniqueness not just of the imaging experience but also of the individual patients was emphasised when MRFEM12(2A) recognised that some patients need to know beforehand, but she did not.

12.0 Satisfied

The sample of patients were quite satisfied with the MR scanning procedure, with some notable exceptions. MRMALE10(2) and MRFEM12(2A) expressed reservations throughout the procedure but even here the former interviewee agreed that his current scan had been a large improvement on the previous ones. Despite stories and other concerns some patients felt comfortable once

inside the scanner. For example, MRMALE6(2A) who was worried about the noise and being closed in, said ‘when I was in there [scanner] I was fairly relaxed (lines 22-23). Repeatedly the radiographers appeared to allay fears that patients presented. MRMALE7(2A) described the staff as ‘brill’ (line 27). The group were also pleased, from what they knew or had acquired, about the diagnostic capabilities of the scanner, ‘It is an asset’ (MRMALE11(2A), line 43) and referring to the scans MRMALE9(2A) (line 47) labelled them as ‘great things.’

13.0 Explanation (Charon, 2001)

The data selected with this code revealed some very interesting findings. Encouragement and reassurance were evident (MRMALE4(2A), MRMALE5(2A)) and occasionally references to the caring nature of the radiographers were made (MRMALE8(2A)). These points would obviously be of great importance in the exposition of the examination given to others. The remaining explanations were however more mixed with words of support blended with concern. MRFEM10(2A) who, incidentally had already given such an illustration of the procedure to another patient, (networking) told her that ‘it’s quite noisy, but its okay’ (line 39). In addition, MRMALE9(2A) would tell others that ‘it’s a bit frighteningbut otherwise nothing’ (lines 45-46). It was interesting to note that the words of concern were always preceded by the words of reassurance. MRFEM12(2A) hinged her explanation on the fact that it was not dark and was easy to escape if necessary, these being her own major concerns. Both MRMALE3(2A) and MRMALE7(2A) used analogies to elucidate the information to others, although their choice of a ‘gun

going off' (line 51) and like 'having your head inside a washing machine' (line 45), would, I suggest, have a detrimental impact upon any pessimistic future patients. The most worrying comment came from MRMALE10(2) who felt that he could not tell the truth. He declared that 'I wouldn't tell them the way that it really is because it would scare them, so I would have to say to them that it is not as bad as it seems'(line 241-243).

14.0 Analogies (Hunter et al, 2002)

Patients still continued to spontaneously express their feelings with the use of analogies in addition to the responses to the question. The overall opinion of this group was that the MR experience couldn't be compared with anything else, since it was a unique experience (MRMALE6(2A); MRMALE8(2A); MRMALE10(2A); MRMALE11(2)) and probably includes MRFEM10(2A), who preferred to describe it as 'very different.' The sensation of being closed-in, was once again obvious in the analogies of 'potholing' (MRMALE5(2A), and 'play-fighting with children' (MRFEM12(2A)). This was followed by the relief of getting out of the scanner and the ultimate freedom to move around being expressed as 'about to jump out of an aeroplane' (MRMALE7(2A)). There was another analogy about a visit to the dentist (MRMALE9(2A)), which can be a fearful experience for some patients, but not always, as the results of this study are gradually revealing.

15.0 Communication (Murray and Stanton, 1998)

As mentioned in the CT interviews, any attempt to interpret the patients' non-verbal communication was considered to be potentially misleading and was

therefore not undertaken. Patients were quite pleased with the level of communication, the staff seemed to keep in regular contact (with a few exceptions) usually via a microphone and the knowledge that patients were being observed was also very reassuring (MRMALE8(2A) and MRFEM10(2A)). MRFEM12(2A) considered this to be an important point, since she then knew that if she had any difficulties someone would notice and come to her assistance immediately. As with most of the codes opinion was varied, as was the case for MRMALE6(2A), who had assumed that some form of communication existed between him and the radiographers, but he wasn't certain about this. Also MRMALE7(2A) noted that there was a distinct lack of conversation while he was in the scanner. Critical of the radiographers for not communicating with him MRMALE10(2) said, 'it's a big machine, a noisy machine, if they [radiographers] don't speak to me I don't know they are there' (lines 391-393). This requirement for human contact was a frequent theme throughout many of the codes and was underscored by the knowledge that many patients were unable to see what was happening.

16.0 Control

It was evident that only a few interviewees related to any aspects of keeping control in the scanner. MRMALE4(2A) maintained control since he had learnt what to do from previous scans, although it is noted from the results that previous scans did not necessarily reduce concerns and fears, but in this case experience was a benefit. The traumatic experience of MRMALE10(2) continued to dominate phase-two, he pointed out that his fears and anxieties (which lead to his loss of control on the day) were in fact manifested weeks

before the scan. Meanwhile MRFEM11(2A) controlled herself by identifying an escape route from the scanner, should the need arise. Finally, MRFEM12(2A) had to abandon her first attempt at being scanned; when slid into the bore of the scanner she realised that she couldn't do it (line 22).

17.0 Coping Strategies (O'Connor and Cotter, 1998)

Two significant coping strategies were identified in this sample. The first technique was the comfort of the emergency button (MRMALE3(2A); MRMALE5(2A); MRMALE6(2A); MRMALE8(2A); MRFEM11(2A)). It was not the fact that any of these patients actually used the button, rather that it was present if required. This was also mentioned by MRMALE4(2A) who said 'you've got the buzzer thing in your hand if you did panic' (lines 101-102). The second method of coping, which was common in all sample groups, was for patients to close their eyes. The reasons behind this seemed to vary, for one interviewee it took his mind off the reality of the situation (MRMALE11(2A)) but for another (MRFEM12(2A)), who had been instructed to close her eyes, it meant that it appeared to be much brighter inside the scanner. In both cases it acted as a distraction technique. Other more unusual techniques included the man (MRMALE4(2A)) who counted in a predefined order in a very similar manner to CTFEM12(2). MRMALE10(2) who preferred not to count, insisted on his partner being present with him, this human contact 'helps to know that someone is there' was also requested by MRFEM10(2A) (lines 27-28).

18.0 Symbolic Significance (Mead, 1934; Blumer, 1969)

Once again some patients failed to recognise the image of the scanner from the picture presented to them. The need to see a picture of the scanner in order to express meaning was evident. This was exemplified by MRMALE4(2A) who drew a picture in the air, rather like the nurse in phase-one, and MRFEM10(2A) who tried to picture in his mind what the machine was doing inside. MRMALE8(2A) mentioned that the image of the scanner he had seen on television had made him a bit apprehensive, but of more concern was the dramatic impact that similar television pictures had on MRMALE10(2). This patient deliberately avoided looking at any pictures of scanners, since to him they symbolised being 'really scared' (line 12). Upon seeing the television pictures, some weeks prior to his examination, he declared 'I tell you I could have done without that' (lines 274-275).

19.0 Isolation

To place the issues of isolation within this sample into perspective, seven, (that was just over half), reported problems with being in a different room, remote from the radiographers. Some patients were aware that the radiographers were not in the room (MRMALE4(2A) and MRMALE5(2A)), while others 'had no idea (forceful voice and expression) where she [radiographer] was whatsoever' (MRFEM11(2A) line 25). One elderly patient (MRMALE9(2A)) thought someone had been in the room with him when in fact he had been alone throughout. If patients do feel isolated it can be a disturbing experience for them as MRMALE3(2A) recalled, 'you can't see nothing at all, you think they have left you inside this machine thing' (line 57). Even with his partner beside

him the fact that he was lying inside the equipment with the staff remote from him made MRMALE10(2) feel 'pretty much alone' (line 319).

20.0 Perceptions of Radiographers

One clear finding of this study was that the radiographers were regarded as very caring and as having the professional skills to allay many, although not all, of the fears with which a patient presented. The praise for the staff was very encouraging, they were described as 'very understanding' (MRFEM12(2A), line 56) by a patient who had severe phobia problems and 'brilliant' by patients (MRMALE7(2A) and MRMALE8(2A)) who had few difficulties. Keeping patients informed was considered to be an important attribute and MRMALE7(2A) was in no doubt that the radiographers 'tell you everything you need' (line 63). MRMALE11(2) was also particularly pleased with the radiographers and suggested that a certain type of staff were needed for this type of technology. The comments were not exclusively positive however, MRMALE10(2) was critical of the lack of communication throughout his scan but this might, in part, have been due to the fact that there was a misunderstanding consisting of him asking not to be kept informed of the time (lines 313-320). Other perceptions of radiographers portrayed them in a poor light 'I mean you start to think have they gone home' (MRMALE3(2A), lines 54-55) was a comment repeated a few times (MRMALE4(2A) and MRMALE6(2A)). The title 'radiographers' was never mentioned or their role questioned.

21.0 Moulding Preconceptions (Charon, 2001)

Almost without exception, (MRFEM11(2A) and MRMALE4(2A)) patients had been heavily influenced by others, family members and the media. 'Others' once again included patients who were responsible for relaying powerful tales of what might, or might not happen, inside this imaging technology. A typical example of the negative comments from 'others' was that given to MRMALE5(2A) 'oh I've been for one of them, [MR scan] it wasn't a nice experience' (lines 24-25) he said. Media influence once again figured strongly (MRMALE6(2A); MRMALE8(2A); MRMALE10(2); MRMALE11(2); MRMALE12(2A)). It was noted there was scant evidence of any reassuring comments, thus ensuring that the networking of preconceptions would all focus on the negative aspects of the scan.

22.0 Stories (Lupton, 1994)

The stories provided some rich data which would account for some of the preconceptions that patients acquired. Tales relating to being trapped in traumatic tunnels were frequently told with passion (MRMALE3(2A) and MRMALE9(2A)). This reflection on their own experiences was however rarely duplicated, leading the current patients to conclude that 'its more what other people tell you, than actually was...you know the experience itself' (MRFEM12(2A), lines 67-68). This was a significant point and was mirrored in the obvious relief sometimes noted upon seeing the scanner. Patient networking about other radiological examinations was also revealed with 'everyone on the ward talking about it' (MRMALE10(2), lines 363-364), but

again the reality did not match the expectation, since the procedure was ‘not as bad as I was led to believe’ (lines 359-360).

23.0 Self (Shannon and O’Connor, 2000)

In order to maintain consistency, self is considered as in the CT interviews (phase 2) within three categories. It was noted however during the analysis of this sample that some patients reported losing track of time (MRFEM10(2A); MRMALE7(2A); MRMALE6(2A)) with concern being expressed, since ‘you don’t know how long you have been in there’ (MRMALE7(2A), line 37). In addition, MRMALE10(2) spoke of taking his mind off the current situation and MRMALE9(2A) had similar sensitivities, saying ‘I imagined I was somewhere else’ (line 14). These feelings of intentionally being somewhere else, coupled with disorientation by the loss of time, were labelled as ‘spacial self’ and added a fourth category to this code.

Resigned Self

Fewer incidences of this category were noted, MRMALE6(2A) ‘did not want to sneeze or get taken short’ (lines 24-25) and MRFEM12(2A) reconciled herself to the fact that the only way to get the examination completed was to have some sedation, ‘I thought I’d put up with the injection’ (line 54) she said reluctantly.

Physical self

Concerns over the physical self were very common, especially the fear of being squashed or totally enclosed (MRMALE(2A); MRMALE4(2A);

MRMALE9(2A); MRMALE12(2)). Others were seriously worried about what might happen to them (MRFEM12(2A)). The need to protect the upper half of the body was again mentioned, insertion of their lower body didn't present too many problems, but the thought of entering into the scanner further was disturbing (MRFEM11(2A)). One further reference to the 'undignified' barium enema examination was witnessed (MRMALE5(2A), line 76).

Questioning Self

Patients continued to question what was happening, as outlined by MRFEM10(2A) who said 'I mean there were questions in my mind as I was lying there' (line 48). MRMALE8(2A) continued with this theme saying 'you wonder what the heck is going on' (lines 33-34) together with MRMALE3(2A); MRMALE4(2A); MRMALE5(2A) who all queried what was happening to themselves during the scan.

24.0 Orientation

There were only a few references towards orientation in the scanner, MRMALE5(2A) was not sure how far he would be inserted into the equipment and did not relish the thought that he was going to be lying face-up. Similarly MRFEM11(2A), who 'didn't get chance to look behind' (line 27) as she entered the scanner, and as a result felt a little disorientated. The extent of the problem was nicely phrased by MRMALE3(2A) as follows: 'you lose direction, you know, which way you are going, you don't know whether you're going forward or back or up or down, it's like being in space, I suppose' (lines 91-92) and provided another example of the loss of spacial self.

25.0 Technological Association (Diamond, 1998)

The direct association with the MR scanner was a frequent theme emerging from the responses within this group. The technology was referred to with cautious expressions such as 'tight' (MRMALE3(2A), 'big hole' MRMALE4(2A) and the noise aspect was said to be physically threatening (MRMALE6(2A)). However, the relationship with the technology was deeper than just the use of discouraging words. MRMALE5(2A) found himself measuring up against the machine, would he fit inside it he asked. In addition, MRMALE10(2) stated significantly that his total anxiety was with the technology. He concluded later in the interview, 'I will always be afraid of it' (line 385). Both MRFEM11(2A) and MRFEM12(2A) spoke about the MR scanner in almost animate terms referring to the equipment as *that* and *it*. MRFEM12(2A) wasn't sure if the equipment would touch her 'it was just...a fear of it' (line 59) she declared.

26.0 Memories (Luck et al, 2000)

Two significant memories were recalled while having the scan. MRMALE4(2A) said that the event reminded him of the very traumatic radiotherapy treatment he had a few years ago and also recalled the fact that other patients were too afraid to go in, such was the extent of their fears. MRMALE9(2A) thought that the scan brought back memories of having gas at the dentist when he was a teenager.

27.0 Compliance

The final code from the patients' analysis was that of compliance. As already mentioned MRFEM11(2A); MRMALE3(2A); and MRMALE6(2A) did not want to move during the procedure so that good diagnostic images would be acquired. In addition, MRMALE10(2), who was very concerned throughout, focussed hard on keeping still since otherwise 'they will have to start the whole thing from the beginning again, so I may as well carry on' (lines 209-211).

Summary of MR (phase two) data

Human contact and communication were regarded as essential components within the imaging interaction. A formal, as well as an informal, network of communication was identified, although the former network does appear to be selective (Glaser and Strauss, 1965) and rare. Analogies and lay terms are again used to convey meaning and the staff were congratulated on their patient care skills.

Coping strategies were seen to extend beyond those of previous interviewees to include singing and other distraction techniques. The influence of 'others' was once again identified. The membership of such a group, and the fact that receptionists were often included, may, it is suggested, be because of their convenience or perhaps because they were regarded as 'non-medical' and therefore more approachable. The impression that high technology imaging was a unique experience was further developed in these interviews together with another suggestion of male denial. Some data also revealed that many

anxieties were focussed around the imaging technology itself, as noted by Diamond (1998).

Implications for practice

Other imaging modalities were identified as potentially intimidating, due to the proximity between the machine and the patient. Radiographers need to consider this factor for other investigations within the department.

Implications for future research

Similar studies in other areas such as cardiology and radiotherapy would be extremely beneficial to all concerned.

Explanation of Figure 4.3 (overleaf)

Once again this is in the identical format to the previous figures in this chapter and clearly demonstrates the number of common concepts evident in the data. The findings are displayed in Figure 4.3 and cross referenced within Appendix 9.

Figure 4.3 Phase Two MR Results

Phase Two MR interviews		Sample (n=13)													mean age					
Codes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	20	21	22	23	24	25	26	27												
Indigenous Concepts																				
Expectation of being Closed in				Very satisfied			Lay terms													Influence of others and media
Empathy for others				Radiographers praised for care (apparently absent)			Mixed level of knowledge													Reaction on seeing scanner usually positive
Fear of technology (sometimes total)				Isolation/trapped			Previous scans													Noise led to curiosity or fear equipment was not working
Leaflet not always useful				Loss of time			Not significant													All negative preconceptions
Wish to comply				Claustrophobia			Reference to technology													Other examinations subject to networking/stories
				Descriptions were rich and varied																Control: learnt from experience

Recommendations: film to distract from equipment 'Others' often included receptionist patient very perceptive

Sensitising Concepts

Completed literature review
Phase one and CT phase two data
Theoretical sensitivity

Establishing Rigour

Stability of questions with CT phase 2
Equivalence and inductive questions from phase 1
3rd publication (peer reviewed)
prolonged involvement
Inter-rater check

Discoveries

Human contact and communication essential
Complex coping strategies
Formal (selective) and informal networking
Influence of others and stories do not match reality
Relief or fear when seeing scanner
Unique experience
Male denial
Use of analogies
Other imaging modalities significant

Chapter Five

Radiographers' Experiences Results

Chapter Overview

As outlined in the methodology eight radiographers responded to the advert, thereby presenting their own extreme cases (Patton, 1990). It should be noted that since these problematic incidents were specifically requested they are not necessarily typical of the radiographer population. The data presented in this section would seek to validate the patient interviews, providing the first element of triangulation. Many of the interviews were very difficult to perform since numerous disturbances were encountered, including a medical emergency in one radiographer's department to which they had to respond immediately (Radexp2), and workmen drilling in the background when the interview was conducted over a domestic line (Radexp4). Gaining access to busy professionals, even with appointment times confirmed, was fraught with problems. Nevertheless, it proved to be a stimulating experience providing the researcher with some explicit data.

The results are presented in the same format as the previous chapter, with chronological analysis followed by a thematic scrutiny, 'giving a holistic portrayal' (Patton, 1990, p.388).

Contact Summary Sheets (Miles and Huberman, 1994) (n = 8)Radexpl

With no experience of working in either CT or MR, this radiographer attended for an MR scan. Her first scan, which was on an older machine, she described as 'absolutely terrifying' (line 51) since she had, at that time, only expected a scan similar to a CT. Such was her degree of fear that she felt unable to press the emergency button, thus removing the element of control so frequently mentioned in the patient interviews; she was in her own words, 'powerless' (line 100). Going inside the equipment brought back memories of claustrophobia when she was a child and focused on one specific event. Her comments were often more dramatic than those of the patients themselves, for example she stated that 'I definitely remember thinking I'm not going to get out of this alive' (lines 81-82). She couldn't relate the experience to anything similar, but still regarded the scan as a nightmare.

She did however claim that there had been improvements in technology and especially in communication since this first scan. She constantly justified her own department, pointing out that it was not similar to her own experience elsewhere. Praising her own staff she said significantly, 'I would say that the radiographers who work in MR are handpicked and they are all very good at the psychological side of it' (lines 116-119). This is very reminiscent of MRMALE11(2) who considered it essential to have the right staff for the right equipment. The noise was also mentioned for creating an apprehension of being 'crushed' (line 140) and questioning if everything was operating correctly. She

referred to the relief of other patients upon seeing the equipment, or after speaking to the radiographers, thus reinforcing the importance of symbols and human contact.

This radiographer thought that the scant references towards 'having a scan' by the medical staff, rather than a proper description, which were frequently found in the patient interviews, were now a thing of the past. When questioned about gender difference in terms of tolerating scans, she said quite categorically, 'a lot of men don't want to admit that they are worried or have a problem' (lines 185-186). There was further evidence of patient networking, not just in sectional imaging, but cardiology was singled out once again. Finally, this interviewee appeared very aware of the lack of identity associated with radiographers. She suggested one of the reasons for this was due to the fact that 'most of us [radiographers] don't even correct the patient if they call us 'nurse'' (lines 263-264).

Radexp2

This radiographer who worked in CT and MR departments recalled the events of her own MR scan. It was not so much a 'traumatic' as a 'strange' experience for her. She commented on the fact that time seemed to stand-still (spacial-self) while trying very hard not to move. The scan was said to be similar to pot-holing with the relief of escaping being common to both. However, other than the fact that it was 'very noisy' (line 60), she did not elaborate further and appeared to be quite content with the experience.

Unfortunately the interview was interrupted by a medical emergency, so the researcher had to phone back sometime later. It was felt however that this destroyed the continuity

of the interview process and proved that, even with telephone interviews, I was still dealing with 'real world research' (Robson, 1993).

Reflecting on other patients, networking was recognised together with a belief that the problems were not as acute in other radiological examinations. The interviewee said 'they [patients] are used to seeing it [normal x-ray equipment] ...and they are more familiar with it' (lines 82-84). Any suggestion of a difference in gender with respect to compliance was rejected. She thought the main worries that patients had were due to isolation, keeping still, the failure of not coping (from the perspective of 'others'), and whether or not the procedure would hurt. This final point has surprisingly been rarely mentioned in the results to date.

Radexp3

With no knowledge of this modality, this radiographer regarded herself as a lay-person. Although she had an idea of what to expect, the picture of the scanner still represented 'panic' (line 21) in her mind. She found it very difficult to keep still and although she wanted to shout 'stop, stop please come and immobilise [radiographic term] me properly' (line 42), she opted for saying nothing and just persevered. A request for more regular human contact was made, especially with regard to the time, which she could not monitor. Her feelings were quite raw and she told me with vocal emotion that 'honestly I thought I would die from panic' (lines 54-55). Again this level of emotion was rarely found in the patient transcripts. She admitted to being bewildered by the strength of her own emotions. The experience was regarded as being analogous to the underground where the feelings of being lost, closed-in, and claustrophobia can be paralleled with the scanning experience. Her recommendations noted the importance of being able to

visualise the radiographers, thus maintaining human contact when they were out of the room. Once again, no differences in compliance between the sexes were reported, although it has to be remembered that this radiographer did not work in CT or MR. Other radiology procedures such as angiography and radiotherapy were regarded as potentially problematic for patients. This very experienced radiographer closed the interview, with a very poignant reference to the human-technological dichotomy, by declaring 'the equipment can be as big as you like as long as the human being is there to hold your hand, in inverted commas' (lines 141-143).

Radexp4

Despite a clear note in the advert (Appendix 5) and within my explanation before the interview, this radiographer made a point of disclosing her medical details to the researcher. Although these remain in the transcripts, since they form part of the interview text, any identifying names or locations have been removed in line with other interviews in order to retain complete anonymity. Knowing the staff made her feel more 'stupid' (line 40), agreeing with MRFEM1 who had a close association with the radiographers in phase-one. Quite by surprise she developed claustrophobic inclinations, which she found difficult to deal with; she said 'I just wanted out of there' (lines 61-62). Her coping strategy involved the regular motivation of herself in order to distract her thoughts of being closed-in. When she came out of the scanner briefly, she had felt like shouting 'you can't put me back in there' (line 80) but like Radexp3 she said nothing. She thought the experience was unique and felt disorientated, as if her head was moving around (spacial-self). Despite the fact that a nurse was present in the room, albeit reading a magazine, she felt alone. With reference to this nurse, she declared, 'although she [nurse] was in the room, she wasn't in the room for me' (line 107-108), thus showing that

physical presence alone is not always effective. Once again recommendations included regular human contact with time notifications and some form of therapeutic touch.

She recognised the diversity of patients who may experience problems with such a procedure and made a valid point about patients not needing any technological knowledge. She felt it was more important to have simple, clear instructions and explanations rather than an understanding of how the technology functioned. Finally, stories and networking were mentioned and cardiac and barium enema examinations were singled out for the imposing nature of the equipment upon patients.

Radexp5

Working in breast screening this lady had little previous knowledge of the MR procedure. The poor experiences of her mother had painted a 'scary' picture in her mind, but she took a very pragmatic approach, since she knew 'there was no reason for it to be scary' (line 22). Interestingly, she didn't inform the staff that she was a radiographer but did negotiate the amount of communication (to keep on talking) with the radiographer before having her scan, 'so that I would know what [was] happening' (lines 30-31). Like many other interviewees she noted that the scan seemed to take an inordinate amount of time. She had no idea where the radiographer had disappeared to, and she was a little perturbed by the loud noise, thus she employed a coping strategy of repeatedly convincing herself that she was okay. The dissemination of bad experiences, across the conceptual network, was graphically illustrated when she admitted that, if asked by other patients, she would tell them that the MR scan was 'dreadful' (line 58). This information coming from a radiographer would be very alarming, but also, as far as the patient would be concerned,

very believable. She considered the scan to be a unique experience, but did make several comparisons with breast screening.

Issues related to leaving the patient, misconceptions and methods of alleviating fears were all compared. Irrespective of the procedure she said, 'the patient must know that they are in contact with a human at all times' (lines 97-98). Contrary to the thoughts of Radexp4, she believed that patients should have more knowledge of radiation and technicalities. The size and unfamiliarity of imaging equipment was thought to be significant in terms of the patients' immediate response.

Radexp6

Deleterious comments about radiographers have been very rarely reported but this Radiology Directorate Manager was appalled at the way she was treated during her first MR scan. She was placed into the scanner with little or no communication and had to specifically request the use of a mirror to enable her to see outside the bore of the scanner. However, what she observed was radiographers acting unprofessionally by laughing and 'one with her feet on the desk' (lines 29-30). Then the staff proceeded to have tea, presumably in the control room. She was so disillusioned that she vowed she would never employ them if they ever applied for a post in her department. Further evidence of a loss of 'spacial-self' was noted when she said 'I didn't know where I was going, I didn't know how far back I was' (lines 48). She considered the MR scan to be the worst investigation she had ever had. A subsequent scan (in her department) was thankfully a big improvement, since having had such a poor experience herself, she was able to make a difference in her own department by helping to design everything herself.

Likewise by self-selecting herself for interview, she also had a desire to tell her 'story' and influence policy (Patton, 1990).

However her 3rd scan, which was done elsewhere, was also problematic and the radiographers disappeared from view several times without explanation. She said 'the worst thing is not having someone there –you know, thinking if I have to get out of here' (lines 83-84). She demonstrated concern for other patients, especially those of a larger stature, and told me that counting the pulses (noise) enabled her to monitor how long the scan sequences would be, since she claimed the radiographers were not 'telling the truth' (line 114). Her recommendations were for a bright, cool tunnel with colourful equipment as mentioned by an earlier patient in this study. She felt that staff in these high-technology units needed particular qualities, although she did not elaborate further. In terms of patient compliance, although she noted no difference between the sexes, she did mention that 'it's just a macho thing' (line 159) for some male patients. Giving people time and making self-disclosures was important since she could identify with them and advise on coping strategies. Looking at the scanner, often with family present, was found to be of benefit to some concerned patients. Familiarity with technology was, she suggested, important, 'maybe we should ask *Casualty* to do a bit more on MR' (line 202-203) she said reflecting on how rarely and how badly imaging technology is portrayed.

Radexp7

This radiographer considered an imaginary picture of an MR scanner to represent claustrophobia. Only knowing what the technology looked like from television and media images gave her a realistic lay-perspective. Removal of her wedding ring and make-up (identity) made her feel vulnerable and isolated, 'I wanted to cry, I can't cry

because I'm a radiographer' (lines 43-44) she told me. Presentation of 'self' is evident in her statement. She denied that she had any problems when asked by the radiographers and tried to count the pulses as a way of distracting her own thoughts of fear inside the scanner. It particularly disturbed her that there was a lack of continuity with a different radiographer putting her into the scanner and another taking her out. It was not entirely clear why this upset her so much, but she referred to it several times during the interview. A request for an immediate diagnosis was refused, leaving her thinking the worst.

After re-focussing the interview away from her medical condition, she continued; 'I'm going back now about 6 years and I still remember it with dread' (line 86-88). The researcher was very curious that she still felt strongly enough about an experience that was now several years old to actively volunteer to be interviewed. She felt as if she was inside a coffin but no earlier memories of unpleasant events were noted. Assuming that the fact she was a radiographer may, she believed, have accounted for the poor communication, she suggested 'maybe they thought I was a radiographer and knew all about it' (lines 107-108). Having not received any information herself, since again the staff assumed she would already know, she recommended a detailed leaflet for all patients. She felt the process was like being on a 'conveyor-belt, one in one out' (line 142) and in line with many respondents wanted regular human contact. She had observed other patients left sitting around in gowns or 'getting dressed' (line 154) which removed any trace of privacy or dignity. She didn't think such poor patient care was an issue today, remembering that her scan was some years ago, but did identify patients turning up on a regular basis in her department with stories and misconceptions about bone densitometry scans. This had led her to send out letters to patients that clearly stated 'there are no tunnels' (line 191).

Radexp8

This last discussion of radiographers' experiences revealed some remarkable findings from a male superintendent radiographer who described his experiences when having a CT scan. Working in CT himself, he had no real fears, so it came as quite a shock for him, 'I was put on the table and the door slammed behind me and I could hear nothing absolutely nothing'(lines 25-27) he said. He felt very isolated not being able to see, since his head was strapped down, he started questioning what was happening before the scan commenced, thinking the staff may have left him. Feeling as if 'paralysed' (line 49), he reflected on his own 'self' to help him cope, 'I can't panic, I can't get out, this is going to be pathetic if I do, I am a radiographer for God's sake' (lines 53-55). Clear memories of being locked in a wardrobe some 20 years ago were at the front of his thoughts. He likened the experience to being similar to being on 'death row' (line 71) and still remembers this experience of his scan vividly some 6 years later. Another interesting point was the removal of a physical door in the CT room that was replaced with a maze corridor. The fact that you could hear other people did, he suggested, make you feel less isolated. Although he did also note that this meant that patients could hear the radiographers' private conversations. He believed that claustrophobia was like a self-fulfilling prophecy, 'If they think they are going to be claustrophobic the chances are they will be because they have built themselves up' (lines 127-129). He concluded by implying that nothing could be done to alter this preconception. Feelings of 'spacial-self' were once again apparent (lines 154-155). He was very supportive of his hospital consultants for giving patients detailed information which helped to reduce misconceptions. The researcher questioned the nature of the phrase 'putting them through it' and was told it was 'the tying down, claustrophobia and connecting them [patients] to the machine' (lines 175-176). Coping for this radiographer was clearly not

done with an emergency button but by having human contact. He went to great lengths himself to keep his own patients informed of his whereabouts, deliberately making noise so they were aware of his presence.

Axial Coding (Burnard, 1991)

Axial coding using the same codes, if relevant, derived from the patient interviews were used to analyse these interviews. Any additional 'new' emergent codes from this sample were also considered. The only code added was that to record the radiographers' professional experience of working in either CT or MR.

1.0 Free codes

Of the eight interviewees, five had previous experience of CT or MR. The remaining three had no direct contact with the technology before their scan. Seven interviews were related to MR scans and one interview (Radexp8) to a CT scan. There were seven female radiographers and one male in the self-selecting sample.

2.0 Concerns

Some of the concerns expressed were more dramatic than those found in the patient transcripts, perhaps suggesting that there was less fear or respect for the 'authority' of the radiographers. Two radiographers (Radexp1 and Radexp3) in particular, didn't believe that they would survive the experience with comments such as 'I honestly thought I would die from panic' (Radexp3 lines 54-55). Two scans were between 4-6 years ago, a significant amount of time to still feel the need to discuss their concerns in an interview. The fact that these professional colleagues had never been given the opportunity to

express their feelings gave some further justification to the study. It was presumed by these two radiographers (Radexp7 and Radexp8) that the problems they identified at that time had now been addressed in modern radiology departments. Radiographers were often surprised at their feelings and reactions, this was reported by Radexp8 who said about his CT scan; 'I was expecting to lie there, it wouldn't be claustrophobic and that it would be okay. It was however quite a shock' (lines 23-25). Other concerns were related to the equipment (Radexp4 and Radexp8), noise (Radexp5), Isolation (Radexp7 and Radexp8), radiographer behaviour (Radexp6 and Radexp7), the duration of the scan (Radexp5) and in particular lack of human contact (Radexp3,4,5,6,8).

3.0 Expectations

Those with experience of working with the modality obviously knew what to expect (Radexp1,2,4,5,8) but nevertheless, even then the expectation did not always match the reality (Radexp8). Radexp1, who had seen a CT scanner, was expecting a very similar thing for her MR scan, 'but it was nothing like' (lines 42-43) she claimed. Even with no direct experience a good idea of what to expect was gained from the media images, but again it was noted that the reality was very different (Radexp 3,6,7). Like many patients, Radexp5 had based her expectation on her mothers' experiences who told her the MR scan was 'dreadful' (line 21). Another (Radexp7) interviewee reported that the level of noise was very unexpected.

4.0 Feelings

The majority of feelings were recorded under other codes which represented them better. However, feelings ranged from being absolutely terrified or fearful of the equipment (Radexp1) at one extreme, to 'just getting edgy' (Radexp 2, line 39). Radiographers

spoke of having unexpected and irrational feelings (Radexp3 and Radexp4). This was typified by Radexp3 who said her feelings were 'very very strange' (line 70). The feeling of panic in one form or another was evident in all the interviews, even to a small extent in Radexp2. Comments such as 'get me out of this confined space' (Radexp4, lines 96-97) were commonplace. The researcher had to remind himself that these were 'radiographers as patients' and yet the feelings were so strong and unexpected.

5.0 Information

There was little to report in terms of information, for those with experience of the modality there was little point in reading information leaflets (Radexp8) and the issue was rarely raised within the context of the interviews, although Radexp6 was critical of the lack of detail. If the radiographers were given appointments at short notice information sheets were not an expectation. In addition, since the sample were all radiographers, there may have been a false assumption that they already knew everything, much like the false assumptions made for patients who had previous scans. One positive note with respect to information came from Radexp8 who felt that few patients have misconceptions today since the consultants give them detailed information and thus 'people know what they are letting themselves into' (lines 166-167).

6.0 Knowledge- not relevant to this group

7.0 Misconceptions

No misconceptions of note were recorded with this group, which would perhaps be expected from radiographers. However, when asked about other patients' misconceptions many were revealed which were similar to those found in the patient interviews. It was

the considered opinion of these radiographers that patient misconceptions included; thinking CT and MR were the same procedure (Radexp1 and Radexp2), having no idea how long the scan would take or indeed what it does (Radexp4), thinking all scans involved 'tunnels' (Radexp7) and the passing on of 'stories' (networking) within patients (Radexp5). Radexp6 and Radexp1 both felt they could relate to the misconceptions presented by patients having now been patients themselves. The researcher felt this was a very important point.

8.0 This code was merged in the patient interviews.

9.0 Other Radiology

Other areas of radiology that may present difficulties for patients were identified as Cardiology (Radexp1 and Radexp4) PET (Positron Emission Therapy) scans (Radexp8), Angiography (Radexp3), Radiotherapy (Radexp3) and Barium enemas (Radexp4). Many felt that familiarity with the equipment tended to reduce concerns (Radexp2 and Radexp5), Radexp6 considered this to be 'a fear of the unknown' (lines 200-201). Angiography, Radiotherapy and bariums enemas were criticised for distancing the patient from the operator and the large size of the equipment (Radexp3 and Radexp4). With respect to cardiology, patient networking was again mentioned, in this case the nurses would intervene if the details were overheard to be incorrect. Nevertheless stories such as 'oh the man in the next bed had one it was awful and he nearly died' (Radexp1 lines 227-228) were still evident. Once again, it was noted that some of these stories were for completely different examinations.

10.0 Reaction in the scanner

The detail within this segment is considered under other more appropriate codes.

11.0 Recommendations

Recommendations included educating the public (Radexp5), educating the radiographers by getting them to experience an MR scan before working in the unit (Radexp1).

It should be pointed out at this stage that the researcher had not experienced either a CT or MR scan since this would have introduced another element of subjective opinion and bias.

A request was made for more aesthetically pleasing equipment (Radexp6) and more information on leaflets (Radexp6 and Radexp7). There were several recommendations for regular human contact (Radexp1,3 and Radexp4); Radexp4 in particular commented, 'maybe if you could reach a hand, you know to let them know if you were okay or not' (lines 135-136) recognising the value of therapeutic touch.

12.0 Satisfaction

Since extreme cases expressing a degree of difficulty were requested, little satisfaction was expected. Only one radiographer (Radexp2) appeared quite content with the procedure.

13.0 Explanation (Charon, 2001)

This code was not relevant, although it was noted that Radexp5 would have told other patients that the experience was 'dreadful' (line 58).

14.0 Analogies (Hunter et al, 2002)

The analogies question served as an extremely useful tool within the radiographer interviews. It made the interviewee think about the experience in different terms and like the patients enabled me to enter into their terms of reference (Burnard, 1991). Radexp4,5 and 6 all considered it to be unique. Potholing was the similarity for Radexp2, with obvious links to the confined space. In line with some patient analogies, Radexp7 said she felt 'as though [she] was in a coffin'(lines 81-82), while Radexp1 thought it was her worst nightmare of being buried alive. The analogy of the London Underground was very fitting and novel and was mentioned by Radexp3. The most dramatic analogy however, came from Radexp8, remembering this was a CT scan, not MR, he claimed that the experience was like 'death-row.' He clarified this statement by explaining that it gives the 'image of the chap about to be executed and is unable to move waiting for the inevitable to happen' (lines 71-74). This was a worrying statement from a CT superintendent, or perhaps it should be viewed as reassuring if it means he takes this into account in his patient care.

15.0 Communication (Murray and Stanton, 1998)

Communication was another attribute that could have been analysed under many diverse codes. There was however a concerted effort to code direct communication issues within the transcripts. By far the most common problem was the lack of regular contact (Radexp3, 5, and 4) and these radiographers made a point of keeping their own patients regularly informed. This once again demonstrated that by experiencing the scan themselves radiographers probably learn to identify the needs of their own patients. Radexp8 thought communication broke down due to the fact that he was isolated, while Radexp1, who was unable to move or speak such were her fears, felt that she couldn't

have communicated with the radiographers, even if she were able to do so. The lack of communication on its own made Radexp6 think this scan was the worst procedure she had ever had to endure. Only Radexp2 did not have a problem with communication and knew how to contact the staff should the need have arisen.

16.0 Control

Incidents of control, or more specially self-control, were found within these transcripts. Radexp5, 3, and 1 all found it difficult to control their movements out of panic. Being unable to cope was heavily influenced by totally unexpected feelings of claustrophobia. As Radexp6 reported 'I didn't imagine I would be claustrophobic because I wasn't claustrophobic ever before' (lines 44-45). In addition, the opinions of others were considered very important with any loss of control making them look foolish (Radexp4 and 8). When questioned about the possible difference between males and females, no consensus was reached. Radexp6, 2, and 3 thought the experiences were no different, although women were said to be more willing to make their fears known (Radexp3 and 6). Radexp1 noted that more males than females had fainted and yet did not admit to having problems.

17.0 Coping Strategies (O'Connor and Cotter, 1998)

A range of interesting coping strategies were recorded. Convincing oneself that everything would be fine was quite common (Radexp4, 5, and 8) but surprisingly, closing eyes was rarely mentioned (Radexp5). Both Radexp3 and Radexp1 were focussed on keeping still, while Radexp6 and Radexp7 actively counted the pulses in order to monitor time and try and relax. Radexp6 said about this technique; 'I use it as a rhythm, it can actually be quite relaxing' (line 105). The need for human contact which had been

reported under other codes was of paramount importance to Radexp8, who preferred to hear people around him rather than have the emergency button. Interestingly, he went to the most extraordinary lengths to ensure that his own patients could hear him while having their scans.

18.0 Symbolic significance (Mead, 1934; Blumer, 1969)

The researcher was surprised at the range of meanings radiographers associated with the scanner. It was expected to be completely different to that of the patients, since they have different perspectives, but this was not always the case. Some knew what the technology looked like, if only from media presentations (Radexp6 and Radexp7). The symbolic significance of the scanner was often associated with occupation; 'work' (Radexp8), 'imaging' (Radexp4), and 'technology' (Radexp2) but others were more from a patient's perspective. These were in common with the patient interviews and included 'tunnel' (Radexp1 and 6), 'claustrophobia' (Radexp7) and 'panic' (Radexp3). The sight of the scanner also seemed to make a difference with Radexp6 making a point of showing it to patients and their families. Unexpectedly, a couple of strange representations were noted with 'big fat toilet roll' (Radexp5) and Radexp1 referring to the scanner as a 'washing machine.'

Does this mean that the assumption made earlier, that patients did not recognise the technology for what it was, should be questioned further?

19.0 Isolation

This turned out to be a common code and again the lessons learnt from their scans were used to help their own patients. Radexp3,7 and 8 all reported that they could not see the radiographers, with Radexp3 saying that 'if I had been paranoid I would imagine that

they [radiographers] had gone off and forgotten me' (lines 92-94). Similarly, there was a request for contact with the staff, and the need to talk to someone in order to reduce the feelings of isolation. If visual contact was not established, then Radexp8 considered audible contact to be sufficient. Radexp4 considered the remote operator in barium enema examinations to be an isolating factor even though the patient and the radiographer are in the same room for these procedures. As far as Radexp2 was concerned, patient isolation was thought to be due, in part, to their own expectations, 'the fact that they are going into a tunnel, they [believed] they are going to be left in there with nobody in there' (lines 99-101).

20.0 Perceptions of radiographers

There was almost a complete contrast between the perceptions of radiographers by the patients and those of their peers. With few exceptions (Radexp2) radiographers were critical of their colleagues. Radexp4 reported no major difficulties with the radiographers but the absence of any praise was also noticeable. Lack of regular contact to inform patients what was happening was the main concern, and one that was mentioned by Radexp3 and Radexp5, who lost contact with the staff. Radexp6 in particular was disgusted with the behaviour of the staff who were fully aware that she was a radiographer; she said 'I found that quite amazing, not that I expected any more than the patient but they might have behaved professionally' (lines 34-36). This interviewee, who was now a radiology manager, implied that the staff in these units should be instrumental in gaining a successful examination for the patient. Likewise Radexp1, reflecting on her own department, admitted that 'we could do an awful lot more to actually let others know what our role actually is' (lines 259-261).

21.0 Moulding Preconceptions

Since this group consisted of radiographers there was little in the way of preconceptions that might have influenced them personally before the scan. As reported earlier, there was the usual pressure of media in configuring minds and expectations but nothing significant. Several radiographers (Radexp6, 5, 7, 8) had actively taken measures to counteract these preconceptions in patients by clearly stressing the facts in information leaflets (Radexp7), talking to patients and generally trying to educate the public (Radexp6). In contrast, Radexp8 disputed the influence of preconceptions, with respect to PET scanning he said, 'many [patients] come with an open mind because they don't know what a PET scanner is' (lines 184-186). However, the evidence so far has suggested that few patients arrive with open minds.

22.0 Stories (Lupton, 1994)

Stories from a family member assisted in preparing Radexp 5 for her scan since she had no previous experience of an MR scan. This same radiographer recognised that patients were often told terrible things (Radexp5) and the main reason why CT patients expected to have an MR scan was, according to Radexp2, simply due to the influence of their neighbours. The reality is again different, but clearly patients expect 'it to be worse than it possibly is' (Radexp4, lines 179-180). Once again rumours and speculation often proved to be for different examinations (Radexp1).

23.0 Self (Simon, 1999; Shannon and O'Connor, 2000)

Identifying sub-categories of 'self' within the radiographers' experiences interviews became easier as the research progressed due to indigenous concepts already developed from the patient interviews. A symbiotic relationship was emerging whereby data from

radiographer interviews not only triangulated that from patient interviews, but a reciprocal influence was also evident.

Questioning Self

There was little to report within this sub-category which is probably due to the radiographers' knowledge of the procedure. Radexp3 questioned how long the examination would last, and enquired several times as to the location of the radiographers. Some interviewees (Radexp4, 6, 7, and 8) struggled to come to a decision; should they admit that they were experiencing difficulties even though they were radiographers?

Resigned Self

As with the patient interviews, this was a common code in the transcripts. For Radexp8 the choice of CT or MR scan was not so much a selection as an inevitability, 'I knew full well I wouldn't be able to cope with an MRI, even though I was a radiation worker' (lines 19-21) he admitted. Even if they were experiencing problems, radiographers preferred to say nothing (Radexp1, 2, 3, 4 and 6) rather than appear to look foolish. Radexp7 lied about being okay, when asked by the radiographer, and carried on regardless. The radiographers also identified this sub-category in other patients, where the fear of looking foolish meant that many patients would prefer to say nothing. Radexp2 believed that the opinions of other family members were also taken into consideration and to 'fail' in their eyes would be equally unacceptable, there was clear evidence of peer pressure on radiographers and patients to be submissive and conform despite experiencing problems.

Physical Self

The restricted space once again generated expressions of concern. Radexp4, 6 and 8 all mentioned the confined area between themselves and the technology. Radexp2 thought that some patients might think that the procedure would hurt them, although this was not found with the patient sample itself. The removal of personal objects was however very significant for one particular radiographer. Radexp7 felt strongly that removing her jewellery and make-up made her more vulnerable and she also expressed embarrassment for other patients 'sitting in gowns' (line 152) and thus revealing their physical self.

Spacial Self

Radexp5 and Radexp2 reported that time appeared to standstill, while Radexp3 stated that 'it was an interminable amount of time; I found out it was only about half an hour' (Lines 45-46). In addition Radexp3 had difficulty in locating the radiographers, she had like Radexp4, completely lost her 'bearings' (line 98). A similar lack of direction was also mentioned by Radexp6 who stated that 'I didn't know where I was going and I was getting quite disorientated' (lines 25-26).

One final sub category of 'self' emerged from this sample; that of 'Professional Self.'

This was defined as 1) the recognition of the fact that these patients were also radiographers, 2) professional identity and 3) the use of self-disclosures to other patients. The fact that these interviewees were also radiographers contributed towards their anxieties, 'I can't say this [felt awful] because I'm going to look stupid because I'm a radiographer' Radexp4, (lines 40-41) told me. Radexp8 and Radexp4 had similar concerns, while Radexp5 preferred not to tell the staff she was a radiographer, implying that this was a good strategy, thus hiding her 'professional self' from the experience.

Radexp1 reiterated the fact that patients fail to recognise the professional self 'every one calls you nurse or doctor' (line 261) she said. One very useful outcome of having radiographers as patients was the fact that this then enabled them to make self-disclosures to the patient about the scan experience (Radexp1, 6 and 8). This might assist in configuring the 'professional self' towards the patients needs, since as Radexp6 noted ' I was very keen on patient care having been through it myself' (lines 68-69).

24.0 Orientation

Two radiographers, Radexp5 and Radexp6, were placed inside and then immediately withdrawn from the scanner. This enabled them to adjust to the confined environment and as Radexp5 said, 'because I needed to try it out and then come back out again' (lines 34-35). This appears to be a useful strategy with respect to orientating the patient. Radexp4 who had to go into an older scanner with a 'longer straight bore' (line 35) felt as if she was floating and wanted to place her head onto a pillow in order to stabilise herself. Similarly, being completely within the scanner was as disturbing for Radexp1. However, it wasn't just the equipment that produced these difficulties; Radexp7 noted that the 'conveyor-belt' (line 142) process allowed no time for patients to acclimatise to the situation, a point that may be lost if the focus was purely on the imaging equipment.

25.0 Technological Association

Interestingly, even though Radexp1 had previous MR scans and worked in the MR unit he still questioned if the equipment was functioning properly and whether it might crush him.

The researcher picked up on the term used by Radexp8 'putting them through it' (line 174) by which he referred to the close interaction between the patient and the scanner. He continued by implying that the patient was connected to the machine, possibly implying that they were thus an appendage of the technology in some format. Radexp4 and Radexp8 both mentioned the physical size and close proximity of equipment with respect to the patient with Radexp6 remarking that it was the worst technological test they had ever encountered. Unfamiliarity with new technology was considered to be partly responsible for some of the difficulties (Radexp2 and 4), affecting individuals in different ways (Radexp5). However, Radexp3 believed that no matter how dominating the equipment maybe feelings of anxiety or concern could always be tempered by regular human intervention.

25.0 Memories

There were few memories noted within this sample, but those recorded were very descriptive and recalled detail from many years ago. Radexp1 said that the scan brought back feelings of claustrophobia as a child and described a particular event of being closed in a cupboard some years ago. Radexp8, who had his scan in 1996, still remembered it with great clarity and told me of the time when he first felt claustrophobic some 20 years ago. However, it should be noted that claustrophobic feelings did not always bring back memories. Radexp4 considered the experience to be unique and could not make any comparisons with previous events, while Radexp3, who was not normally claustrophobic but was during the scan, also had no specific memories.

26.0 Compliance

All the interviewees in this sample demonstrated a wish to comply with instructions during the scan. It was felt by some (Radexp8 and Radexp5) that, as radiographers and often operators (Radexp4) of this equipment, they should be able to cope better than others, thus leading to feelings of being foolish if things went wrong. Radexp8 expressed the thoughts of the majority of radiographers by remarking that all patients wanted to comply, but it was recognised that this was not always easy (Radexp3).

Summary of Radiographers' Experiences.

The depth of emotion expressed by this sample of radiographers arising from their own experiences, often many years since the scan, was unexpected. It has to be remembered that these were extreme cases, but nevertheless many of the comments were worrying for the profession as a whole. The most interesting finding was that the radiographers were very critical of their professional colleagues, openly criticising their handling of the interaction between technology and patient care. The researcher felt that this sample of self-selected radiographers revealed far more than the top layers of information (Douglas in Gribich, 1999). Many concepts from the patient study were validated, especially empathy for others, the request for more human contact, negative networking and the assumption that MR and CT are the same. However, other concepts were also rejected when viewed from this perspective, these included praise for the radiographers, male compliance and the notion that some of the problems had now been resolved.

The most interesting discovery in this section was that of professional self and the desire to maintain their dignity during the scan. This was coupled with knowledge that although

the experience may have been traumatic, they had gained from the experience; in essence they were experiential learners.

Implications for practice

It was clear to most, if not all of this group, that radiographers need to experience a scan themselves. Only by doing so could they have true empathy and understanding for their patients.

Implications for future research

Studies that involve the imaging professions' opinions on a range of examinations are critical in developing understanding and awareness.

Explanation of Figure 5.0 (overleaf)

It is useful to use this figure in conjunction with the patients' concepts in order to see which ones are common and which have been rejected. It does therefore provide a further element of triangulation of data.

The results are tabulated for cross-referencing (Appendix 10) of codes, in line with the other results, again enabling a comparison to be made.

Figure 5.0 Radiographers' Experiences Results

Radiographers as patients	Sample (n=8)																	
Codes	1.0	1.2	2	3	4	5	7	9	11	12	14	15	16	17	18	19	20	21
Codes and Indigenous Concepts that agree with patient findings																		
Influence of media								Analogies: caving, coffin, tunnel										Staff were not always visible leading to isolation
Empathy for others								Coping strategies included: buzzer, concentrating, therapeutic touch, motivation of self.										
Extreme fear of technology								Isolation/trapped										Noise led to curiosity or fear of equipment failure
Symbolic significance tunnel, claustrophobia								Claustrophobia										All negative preconceptions
Wish to comply								Association to technology										Other examinations subject to networking/stories
Other radiology: bariums, angiography, radiotherapy								Descriptions were rich and varied										Regular human contact and pleasant scan room
2 strong memories of traumatic events																		Misconceptions: CT and MR are the same
																		Evidence of disorientation

Strong recognition of negative networking

Particular type of staff required

All elements of self identified

Some agreement with male compliance

Poor communication due to assumptions

Conveyor belt process

Codes and Indigenous Concepts that disagree with patient findings

Critical of radiographers performing scans

Symbolic significance: Imaging, technology, work

Very strong emotions of fear

Some disagreement with male compliance

Many problems have been resolved today

Other radiology: PET scans, bone densitometry, breast screening

Being familiar with technology reduce anxiety
But not in all cases

Sensitising Concepts
Completed literature review
All patient data
Theoretical sensitivity

Establishing Rigour

- Equivalence and inductive questions from patient interviews
- First element of triangulation of sources
- Prolonged involvement
- Positive feedback from peer reviewed publications
- Inter-rater reliability

Discoveries

- Professional self
- Professional identity
- Reluctance to ask for assistance
- Human contact and communication essential (novel method)
- Complex coping strategies
- Male denial inconclusive
- Use of analogies; extreme examples given
- Other Imaging modalities significant
- Tried to allay fears with self disclosures and learnt for own experiences
- Lack of continuity in staffing
- Loss of privacy and dignity
- Feelings still strong many years.
- Recommended that all radiographers experience scans themselves

Chapter Six

Radiographer Results

Overview of Chapter

The data derived from these final interviews provided the second element of triangulation, this time from the perspective of radiographers working predominately in CT or MR departments. The interviews themselves were more lengthy than those previously undertaken, reflecting the greater range of questions developed by the concepts and the developing expertise of the researcher. In addition, concepts and discoveries were tested within this theoretical sample in order to assess their suitability as hierarchical typologies. This further development of findings was essential, since the researcher did not want to simply identify the codes and concepts at the expense of the phenomenon (Seidel, 1998). Member checks sought to provide further credibility to these results, but unfortunately only three transcripts were returned to the researcher and these with only very minor comments. Nevertheless, these were adjusted accordingly.

Axial Coding (Burnard, 1991)

Using only the relevant axial codes and concepts, in addition to several new emerging ones, since some of the questions differed from previous interviews, (as outlined in the methodology) eight interviews of radiographers were analysed. Since only selective codes were relevant they are reported chronological and not numerical sequence.

1.0 Free Codes

Experience in the imaging modality of either CT or MR varied from 1 year to 8 years, with an approximate figure being allocated for Rad6 since it was not specified within the interview. This still only gave a mean figure of 3.5 years' experience. Although this represents a lack of experience within the sample, it has to be remembered that MR in particular is still a relatively 'new' technology in many radiology departments.

In contrast, the number of years qualified ranged from 4 years to 17 years with an accurate mean figure of 10.5 years' radiography experience.

28.0 Career development and technology (Payne, 1998)

Several radiographers (Rad1, 2, and 3) knew as students that they wished to develop their careers in the imaging modalities. Being fascinated by MR technology, since 'it is right at the cutting edge of technology' (Rad 1, line 21) afforded Rad 1 with many potential opportunities.

Rad3 progressed through her career, increasing her technological skills by working in neurology units, although interestingly, she had no initial desire to pursue a radiographic career. She told me, as did Rad 5 and Rad 6, that 'like most radiographers I didn't get the grades and I sort of fell into it' (lines 16-17). The grades for what alternative profession is not made clear, but this statement, together with others indicating the reasons for choosing radiography such as 'got bored'(Rad 5, line 19), do not suggest that there is any significant technological or indeed patient care attraction for radiography as a career.

Rad 2, who had worked in CT for over 4 years, stated that her main career influence was working with people, in contrast to Rad 4 who, whilst also expressing a similar desire, also admitted that she 'like[d] the machinery actually...so [she] wanted to dabble with that' (lines 13-16). Rad 3 got a sense of satisfaction from assisting patients in MR, and described the imaging technology as 'addictive' (line 53); she had become bored with general radiography, as had Rad 5, 6 and 7. Interestingly, Rad 3 also thought that MR was 'much more personal [for the patient]' (line 40), which is completely contrary to the findings in this study and indeed she went on to contradict her own statement later in the interview.

The main influence in determining a career pathway was an interest in the images (Rad 2, 5, and 7). Whether image quality and cross-sectional anatomy can be categorised as 'technological factors' is debateable, but most, if not all radiographers' careers were influenced by technology and a desire to work with people. Questioning more specifically about the choice of modality further elucidated this particular point.

29.0 Modality Choice

In answering why other radiographers may enter into CT or MR, promotion was the main reason given (Rad 4, 6 and 8), with the attraction of a computer-driven (Rad 7) imaging technology also being mentioned.

When questioned specifically about the non-technological aspects of imaging, Rad1 replied rather curiously that he 'would have to say the patients really wouldn't I ?' ((laughs)) (line 23), suggesting that this was the expected answer. Rad 2 and Rad 7 insisted that their choice of CT was more to do with patient care than imaging, while Rad

6 entered into cross sectional imaging since she felt that general radiography was reminiscent of a 'conveyor belt' (line 38); a term only found to represent the MR process several times in this study. Rad 8 disagreed with this claim, and reinforced the argument made by the majority of respondents in that it was, in fact, the imaging modalities that were guilty of 'pushing patients through, you don't give them [patients] time' (lines 54-55), she maintained. This same radiographer, who had a great interest in helping patients with phobias and fears, (operated a private open MR scanner) developed her own choice of modality out of technological fascination, 'I just thought wow' (line 37), was her immediate reaction upon seeing the technology. This also illustrated that the patient-technology dichotomy can be bridged in the right situation.

30.0 Role Models (Moorhouse, 1992)

All radiographers identified a role model, with the 'knowledge' that role model possessed, being singled out as the important quality. It was also an attribute that most aspired to, 'I want to have this knowledge that they've got' (lines 74-75), declared Rad 6. Being a good communicator (Rad 7 and Rad 8) and enthusiastic about their work (Rad 3) were also identified as essential virtues of role models. The desire to learn from these exemplars in radiography was obvious, but Rad 3 didn't feel that she could ever meet their high standards, even though she was now at the same grade as the role models identified.

The need for radiologists in CT was dismissed if these highly skilled radiographers were present (Rad 7, Rad 5 and Rad 6). However, although some might command respect from the consultants, sadly the radiographers felt that the patients didn't know who they were or what they did (Rad 6). Rad 1 didn't feel that role models still existed in any

great numbers, in a rather damning comment he said that '90 % of the profession aren't up to the standard and I don't think we ever will be' (lines 35-36). Commenting further on the subordinate relationship between radiologists and radiographers, which he blamed in part for the lack of role models within the profession, he said, 'any radiographer who tells you he is autonomous is a liar' (lines 41-42).

Finally, in addition to identifying qualities of excellence, Rad 5 made it her business to mention the poor qualities of some radiographers, describing them as 'awful at this [radiography]' (line 43), once again portraying a negative image of the profession.

31.0 Technological Influence on the Profession (Barley, 1986; Cockburn, 1985)

This code produced some very interesting, if not controversial, findings. There was mixed opinion about the impact of technology upon the profession. The situation in CT was divided amongst the interviewees. There was however some consensus between Rad1, Rad 2, Rad 3, Rad 5 and Rad 6, in that consultants did now appear to give radiographers working in MR more deference, since as Rad 1 pointed out, 'when it comes to MR they [medics] don't understand it and why it works, so we get the respect there' (lines 77-78). However, Rad 6 did not agree with this sentiment and was equally in the minority in thinking that patients regarded radiographers working in these modalities to be of a higher status.

High technology imaging had brought about a role reversal in CT according to Rad 3 and Rad 7, with radiologists not required at all in the process. Although interestingly, Rad 7 then went on to question this perceived increase in status by adding, 'at the end of the day

you are a radiographer, should you be doing these things?’ (lines 77-78). This could be viewed as another form of resigned self.

Rad 8 felt that working in CT or MR could lead to unprofessional behaviour, similar to that outlined by Radexp 6, since the radiographer’s role was now more distant and unclear. With respect to CT she (Rad 8) alluded to the fact that the technology was now so automated that ‘you press a button and the processor talks to the machine’ (lines 172-173), thus the skills required were now very different. This apparent ‘simplification of the task’ due to technological advancements was seen in a negative light by many visitors to the department, some questioning why radiographers required a degree to do it (Rad 1). However, others thought it helped to gain respect since it looked ‘complex and confusing’ (Rad 5, line 65).

It was also recognised that some radiographers would inevitably be left behind by technology if they could not access the modalities, and to compound the problem, their traditional skills in general radiography were often poorly rewarded (Rad 1, Rad 2, Rad 6, and Rad 7). Despite such technological developments, communication skills were still regarded as more important than any technological proficiency (Rad 7) but the reality was that ‘a lot of promotion goes into the areas of modalities [technology] rather than people’ (Rad 2, lines 85-87).

It was interesting to note many negative comments with respect to the technological influence on radiographers, it must appear to others that we are ‘not doing anything other than pressing the odd button’ (line 82), said Rad 4. Of equal concern, was the view held by Rad 8 (lines 137-138), in that some radiographers interact with patients in the

following manner: 'just whack the patient in, hope they keep still, run the sequence and then out,' which once again, regrettably, gives some credibility to the term 'conveyor belt.'

20.0 Perceptions of Radiographers

The perceptions of radiographers, according to the patients, were very positive, although there was a major misunderstanding of identity in terms of who the radiographers were. This was in contrast to the radiographers' perceptions, which were rather negative. By asking the radiographers how they thought the patients viewed them, and their roles, further evidence evolved to try and explain this particular aspect of the phenomenon. In line with the patient findings, Rad 2 believed that patients valued radiographers since they cared for, and assisted them during the scan. She was however alone in her views, Rad 1 considered that 'most [patients] think I just take pictures and the clever doctor goes away and ...reports' (lines 86-87). Rarely, if at all, would patients refer to them as radiographers, preferring the term nurse and doctor, again this is supported by previous findings in this study. One reason for this was offered by Rad 6, who declared that it 'was partly our own fault because we don't introduce ourselves' (lines 127-128). Even when the radiographer didn't wear a uniform, as was the case with Rad 8, the assumption was made that she was a doctor. Although admittedly by calling herself a Practice Manager, rather than a radiographer, may have complicated matters further. Rad 6 told me that she was totally perplexed when I asked her to identify herself as radiographer to a layperson. 'We just don't know what the patients' think' (lines 439-442) she said. Certainly on the basis of this study the patients could not identify what a radiographer was either. Perhaps this was understandable, since patients 'don't know what goes on behind the scenes' (Rad 5, line 86).

Several different roles were evident, from a nursing role (Rad 6 and Rad 7) to a counselling position (Rad 2, Rad 3, and Rad 8), computer operator or just button pusher (Rad 4). According to this sample of radiographers, patients wanted more regular contact and would disclose their problems more readily than in the consulting room, if they felt comfortable with the radiographer (Rad 7, Rad 8 and Rad 3). It wasn't however, just several distinct roles that were identified, it was rather, a sequencing of them all, as Rad 3 explained 'it's whatever they [patients] want you to be when you walk in' (line 208-209). These interchangeable roles (Rad 6) would however still have to meet the continuity of care expected by Radexp 6 in the last interviews. Rad 4 felt that patients often gained the wrong impression of radiographers and then proceeded to tell the nurses back on the ward about the 'computer technicians' in radiology. This was further fuelled by media images of technicians operating scanners in the United States, often seen in television dramas (Rad 1). This additional pathway of 'networking,' that is; patient to nurses, as opposed to, nurses to patients, would give some symmetry to the networking process.

When asked to explain their role to non-radiographers this sample struggled with the very idea, they used lay terms (Rad 1, Rad 3 and Rad 5) to aid understanding but with the exception of Rad 2, they seemed unable to define themselves. Rad 3 outlined the difficulties with using the word 'scan' and its apparent lay-association with cancer. I feel he spoke for the majority when he replied 'that's really hard to say what I am and I think that is the problem in radiography. How do you describe yourself' (lines 260-262). The emerging typology of 'non-persons' found a high degree of acquiescence within this particular code.

32.0 Barriers to communication (Mc Kenna Adler, 1990)

This code considered both physical and psychological barriers to communication identified by the radiographers. Not all radiographers experienced difficulties with the patient being remote from them. Rad 1 for example, gave the same explanation to each patient, or 'patter' (line 101) as he called it, and had few problems. Likewise, Rad 3 took a very philosophical approach, and if the patient was particularly anxious she would stay in the room with them, she did however feel that the process was still very impersonal. In fact all these radiographers tended to agree on that point, with pressures of time and communication being cited as the main reasons. The vulnerability of patients waiting in hospital gowns was also a very impersonal element and was noted in the transcripts (Rad 3 and Rad 4).

Evidence of a conveyor-belt mentality (Rad 5, Rad 3, and Rad 7) was once again evident with Rad 1 admitting that 'I've had days where...I mean to all intents and purposes it is a production line, no matter how you dress it up' (line 120-121). This almost mechanistic approach to having a scan highlights just how impersonal the experience can be and was summed up by Rad 7 who stated :

It's the fact that you are taken into MR and CT and strapped into these machines, basically so they can't move, and they are told that they must not move or it will ruin your scan kind of thing and then they are left; so from a patients point of view I think that it can be very daunting

(lines 166-171).

Methods of communicating with the patient varied with the assessment of the individual, some required regular contact while others just wanted to sleep, reported Rad2. Rad 3 however thought that it was perhaps a patient expectation to find impersonal communication within the confines of a hospital.

Rad 6 raised the issue of therapeutic touch and went to great lengths to ensure the patient knew there was human contact, by touching their legs or arms, while the patient was in the scanner. The most novel approach however, came from Rad 4, she waved through the window at the patient since, if 'they [patients] can see that you're physically almost with them it helps them a lot' (lines 126-128). She outlined a particular incident when a patient was experiencing problems and how she swayed from side to side frantically waving her arms in the air in order to retain visual contact with him and effectively overcoming the physical barrier between her and the patient. Conversely, Rad 8 asked patients to wave at her if they had any problems, although since they could not see her (line 323), the researcher was left wondering how this could be achieved.

Even if the patient could see the window, other problems arose, similar to those noted by CTFEM11(2A). Rad 8 explained that patients questioned why others were in the control room, was there something wrong? Perhaps of more concern, she felt they also thought the radiographers might be having a party, or as Radexp 6 noted earlier; behaving in an apparently unprofessional manner. Visiting another department made Rad 4 aware of the lack of communication elsewhere, once again demonstrating what valuable insights can be gained by experiencing the procedure, in whatever format, in another department. Questioning the point about lack of verbal contact, I asked Rad 6 how many times radiographers would speak to the patient during an MR scan, remarkably she replied: 'Not at all, put them in, don't speak to them no' (line 204), believing that talking only serves to disturb the patient.

The frequently emerging concept of non-persons was apparent again within this code, radiographers often recognised the difficulties but felt they couldn't do anything to resolve some of the problems (Rad 3 and Rad 4) or appeared content not to get involved. 'You don't talk to them as you could do ehm.. and it's a case of lie down, shut up, 5 minutes and I'll press the button, you see the doctor in 2 weeks time' (line 123-124) declared Rad 1, thus confirming his own beliefs that patients thought he just took pictures.

18.0 Symbolic Significance (Charon, 2001)

Radiographers mentioned many of the terms used by patients in both phase 1 and phase 2 that represented the scanning procedure. From experience the radiographers had heard patients refer to the scanner as the 'tunnel,' 'coffin,' 'washing machine,' 'polo-mint,' and 'man-hole' and the sensation was like being 'buried alive' (Rad 1, Rad 2, Rad 3, Rad 4, and Rad 6). Rad 5 and Rad 6 thought that patients often associated CT in particular, with a cancer scanner, where the 'C' stands for cancer. Rad 1 felt that 'the more technological it [the procedure] gets the more serious is your illness' (lines 149-150) and he spoke of a sliding scale that is informally recognised by patients and clinicians in terms of illness and financial cost accordingly.

There was also recognition that the CT and MR scanner often meant the same thing to patients (Rad 7). Rad 8 had come across patients who thought the MR scanner resembled a crematorium, as did Rad 6 herself, and thought they would never come out. One patient told Rad 8 'I'm in the crem, play some music now and the curtains will come over me' (lines 557-559).

The instantaneous reaction upon seeing the technology was alluded to by Rad 3, when the reaction was often one of surprise, especially when compared to the preconceived television pictures (Rad 8). Once the scanner was seen, comments such as 'oh my God it's not big enough, how am I going to fit in there' (Rad 8, line 366) were common. On the other hand, it may work to their advantage, being less daunting than they feared (Rad 3). Such was the desire of some patients to form an accurate 'picture' of the scanner beforehand that they phoned up and asked the radiographer to describe it for them (Rad 7 line 255).

21.0 and 22.0 Moulding Preconceptions and Stories

Confirmation that the majority of preconceptions derived from 'others', (especially family and friends), and the influence of media came out of these interviews. A previous experience on the mobile MR van was also seen to be significant in delivering stories of fear (Rad 3) to other patients. This also matched the opinion of Rad 4, who felt that the shape of the machine was partly responsible for some of the misconceptions, but since in the mobile unit the back of the scanner was also the back of the van, the idea that it was closed-in was often true.

The poor experiences of others seemed to be 'networked' far more readily than good experiences, as Rad 4 said, ' If someone has a horror story to tell, you know it is much more exciting than telling about what has really happened' (lines 234-236). To compound the problem further, Rad 2 believed that the drama got worse every time the story was told. The information sheet was considered to be of limited value (Rad 5) in changing patients' ideas once the original tale had been told.

Although networking was primarily about spreading bad experiences (Rad 2, Rad 6, Rad 7 and Rad 8) the use of lay terms did differentiate the tunnel (MR) from the polo-mint (CT) and very rarely did the terms get used interchangeably. Rad 7 thought that the term 'polo-mint' was developed since you can see out of the other side and the washing machine image it has on the front face (lines 356-358), might help to explain some of the more strange responses towards the symbol of the scanner.

It was also found that radiographers often used these lay-terms themselves, (Rad 3 and Rad 5). For example, the term 'pack of polo-mints' instead of 'tunnel' was commonly used in one department (Rad 5) but unheard of elsewhere (Rad 6 and Rad 7). In addition, one respondent (Rad 5) revealed further 'local language' the like of which the researcher, a very experienced radiographer, had never heard. Some patients were labelled as 'MP' and 'TMP,' which stood for; *much pain* and *too much pain*, before the scan commenced. These labels mainly referred to an ethnic minority group who, anecdotally, were said to have a lower pain threshold. The interesting fact was that this radiographer spoke of using these terms liberally and looked surprised when the researcher questioned what they meant. It appeared that it wasn't only the patients that were subjected to moulding preconceptions, presumably new radiographic staff would be too.

The stories recalled by the radiographers (from patients) were acknowledged as often being extreme (Rad 3, Rad 4, Rad 6) and not matching the reality as they found it, although tales of being 'tied down in a dark tunnel with people sticking needles in you' (Rad 6, lines 276-280) may be a true reflection of the experience for some people. Other stories included the MR patient who phoned everyday requesting a general anaesthetic to have his knee scanned (Rad 3), and the patient who regularly went down man-holes who

left the department in tears since he could not tolerate an MR scan (Rad 6). These cases, although reasonably rare (Rad 8), do illustrate the strength of feeling at not being able to comply. Rad 6 felt it was a 'control thing' (line 287) and despite previous experience in confined spaces, if the patient did not have control they tended to panic. This was also supported by a similar judgment offered by Rad 8. The point made by Rad 6 encapsulated the radiographers' perspective and explained why such stories exist, when she said, 'we know nothing harmful is going to happen but they [patients] don't' (line 294).

33.0 Gender compliance (Luck et al, 2000)

None of the respondents from this sample noted any significant difference in the compliance of males as compared to females, which was an indigenous concept from earlier interviews. If the only issue was physical stature, then naturally more males would find the confined space problematic than females (Rad 8 and Rad 6).

Rad 1; who reported there was no difference, thought that this question should be investigated further with a mini audit in his department, providing a further element of peer credibility to this part of the study.

Although the researcher and the interviewees were mindful that generalisations could not be made, from their personal experiences of these radiographers, there was a suggestion of a difference between the sexes in terms of disclosing problems. That is to say, females appeared to be more open and brought any problems to the attention of the radiographer, whereas males hid their feelings (Rad 2, Rad 3, Rad 5, Rad 6, Rad 7 and Rad 8). Rad 2 said that the females made disclosures early on if they were anxious about anything, but

males gave no hint of a problem, then all of a sudden they would declare 'no I'm going its horrible' (line 279).

34.0 Claustrophobia (Gray, 1999)

Rad 8, who was very experienced with dealing with patients who had previous difficulties, identified two types of claustrophobic patient. The first being a 'true' claustrophobic; a person who knows they have the phobia and struggles with it in everyday life, as opposed to the 'non-true' claustrophobic; one who has never realised they were claustrophobic before the scan. The difference is that the second type is down to a loss of control (Rad 8). Radiographer 1 fitted into this second category, he hadn't had such feelings before and it was the lack of control that brought about his reaction of fear inside the scanner.

19.0 Isolation

Once again reports of isolation were very common. Rad 1, Rad 2, Rad 4, Rad 5 and Rad 7 all felt 'trapped' to some extent. Similar to previous interviewees, Rad 5 questioned if the staff were still present since he could not see them. Many did however retain the important element of restraint, because they knew they could get out, and they knew what to expect. 'It must be awful for the patients' (line 408) pondered Rad 3. Similar sentiments of empathy were expressed by Rad 2 and Rad 6. Recognising both the isolation and the difficulties experienced by some patients, Rad 1 commented; 'I know there are 15 people just through the window watching me, you do, you do feel on your own. How patients feel... it must be 10 times as bad' (lines 209-211). Having windows in the room and the luxury of an open scanner eliminated some of these feelings of isolation (Rad 8).

26.0 Memories (Luck et al, 2000)

Rad 4 recalled a story of a patient who associated the loud noise with a previous traumatic event, and Rad 1, reflecting on his own scans, felt they brought to mind a fearful incident as a child where he was trapped in a sheet. Rad 8 however, could not remember any patients referring to memories of other traumatic events whilst having a scan, although it should be appreciated that, unless questioned, these personal feelings would remain undisclosed.

24.0 Orientation

Three radiographers made some reference to their feelings on immediately entering the scanner. Rad 7 felt uncomfortable on entering the scanner head first and recommended placing patients in feet first, as did Rad 8. Rad 3 was also unsure of herself when she became aware of the close proximity between her head and the scanner and although Rad 6 had few problems herself, she empathised with others saying it must be worrying 'with the gantry in your face' (line 401).

17.0 Coping Strategies

Little was mentioned in terms of coping strategies, other than the fact that sedation worked well (Rad 6 and Rad 7), and that unnecessary general anaesthesia for routine scans was always considered to be too risky (Rad 6). In addition, prism glasses were often used to enable patients to see outside the scanner.

23.0 Self (Simon, 1999; Shannon and O'Connor, 2000)

Three sub-categories of self were identified in this sample of interviewees.

Professional Self (Simon, 1999)

As noted in the radiographer experiences interviews, the fear of failing in front of colleagues was evident within this sample. Rad 4 said that ‘obviously I didn’t show that [fear] because they [radiographers] would think, oh my God, how embarrassing’ (lines 276-278).

Physical Self

As mentioned Rad 3, Rad 7 and Rad 8, recognised the intimidating nature of the equipment as they entered the scanner.

Spacial Self

The loss of time was noted by Rad1, Rad 5 and Rad 8, with the last radiographer claiming that ‘you do come out disorientated’ (line 574).

14.0 Analogies (Hunter et al, 2002)

It is perhaps appropriate that the final code within the results chapter is that of analogies, since it has enabled the researcher to fully understand the depth of feelings and emotions associated with imaging technology. All radiographers were very familiar with patient analogies and terms, some being used by the radiographers themselves (Rad 6). Although not notably perturbed by the experience, Rad 6, a radiographer working in these units, described her MR scan as follows:

It’s like being put in one of those long things in the mortuary, you know those drawers, that what struck me as. You are on a motorised table that brings you in, you are not crawling in, you are not sliding in, it is done for you. No control, you suddenly go from a big spacious room into a dark tunnel, the end-it’s all over

(lines 417-422)

Summary of Radiographer Interviews

The professional careers of this theoretical sample of radiographers had been strongly influenced by the advancement of imaging technology (Foucault, 1998) and role models (Moorhouse, 1992). The group did however still display empathy and concern for their patients with their own accounts of patients' feelings being quite graphic. This also included references towards patients' dignity while waiting for their scans (Davies, 1995). They appeared very conscious of how 'others' viewed their role, and while acknowledging that they had several sequential roles, they also conceded that patients were unaware of who they were or what function they performed. There was a degree of apathy within the sample and while some spoke of a role reversal with the radiologists similar to the decentralisation mentioned by Barley (1986, 1990), others felt that they had no autonomy. Although role models were identified, their influence on staff was not always considered to be as dominant as it was historically. Visits to other department once again showed that the radiographers were learning from each other.

There was further evidence of 'networking' of bad experiences with an inverse link between nurses and patients suggested.

Implications for practice

In recognising the vulnerability of some patients, whilst sitting in hospital gowns in public waiting areas, it is felt that these health care professionals are the very people that should, as part of their sequential roles, be doing something about it. The local language identified could only isolate the profession further.

Implications for future research

Further research into the cultural behaviour of radiographers would seek to understand why there appears to be no obvious attraction into the profession and the reasons for poor self-definition amongst radiographers. Investigations into the socially constructed definition of claustrophobia are also essential in the future.

Explanation of Figure 6.0 (overleaf)

It is useful to use this figure in conjunction with the patients' concepts in order to see which ones are common and which have been rejected. It does therefore provide an additional element of triangulation of data. The concepts should be considered in conjunction with the previous figures in the results chapters. There is broad agreement with the patient-generated concepts, with a few notable exceptions. These include disagreement with respect to male compliance, and like the radiographer experiences, an assumption that many of the problems have now been resolved. The radiographer specific concepts generally concur with those of the previous interviewees. The discoveries make frequent reference to roles and the essential criterion for compliance, which is control.

Figure 6.0 Radiographers' Interviews

Radiographers	14	17	18	19	20	21	22	23	24	26	28	29	30	31	32	33	34
Sample (n=8)																	
Codes and Indigenous Concepts that agree with patient findings																	
Influence of media																	
Empathy for others																	
Extreme fear of technology																	
Symbolic significance																	
Cancer scanner, buried alive																	
Wish to comply																	
2 strong memories of traumatic events																	
Strong recognition of negative networking																	

Conveyor belt process

Vulnerable patients waiting in gowns

Some agreement with male compliance

Viewing radiographers often presents further problems

Initial impact of seeing scanner (positive and negative aspects)

Codes and Indigenous Concepts that disagree with patient findings

Critical of radiographers and sometimes themselves performing scans

Some disagreement with male compliance

Many problems have been resolved today (open scanners)

Radiographer Specific Concepts

Professional Identity

Self-disclosures

Local language

Lack of role models

Visits to other departments

Little autonomy

Negative perceptions of others

Recalled events form years ago

Role reversal

Poor self-definition

Novel methods of communicating

Selective career development

CHAPTER 7

DISCUSSION

Overview of chapter

This chapter deliberates the results of the survey in four sections. Section one discusses the findings of the patient experience and the role of the radiographer, within the context of the radiology department, where the salient issues of the technological-humanistic dichotomy are addressed.

Section two considers the identification of typologies derived from the concepts or discoveries. It is a difficult task converting data into a hierarchical classification, in order to develop a framework of the radiological interaction. Like many other procedures within the qualitative paradigm, no single infallible system exists for doing it (Patton, 1990).

A more creative approach is considered in section three, where the perspectives of Symbolic Interactionism and Critical Dramaturgy provide one final element of triangulation and generate new theory for the profession.

The final part, section four, contemplates the reflexive nature of the study and the key recommendations that have emerged.

Section One

The patient experience

The patients' experiences in these two radiology departments were seen to be unique and diverse encounters. The majority of patients were very satisfied with the procedures, and in particular the radiographers were noted for their caring attitude. Patients expressed a good deal of empathy for 'others' having similar imaging procedures, with a typical comment being 'I was thinking of the people who were claustrophobic' (MRMALE9(2A), line 11). As expected, having a CT scan was not as problematic as an MR scan, but nevertheless some patients still experienced severe difficulties, and the interaction with the imaging technology was just as daunting for these patients (CTMALE4, CTMALE6, CTMALE7), as it was for the numerous MR patients (MRFEM1, MRMALE1, MRMALE4(2A), MRMALE10(2), MRMALE12(2)) who also experienced problems.

Being mindful of the fact that it is not necessarily the frequency of the phenomena, but the individual experience of it, that is important, (Murphy et al, 1998), generalisations are towards theoretical and not statistical propositions (Glaser and Strauss, 1967). The results are considered in the first instance by reflecting upon the literature.

Technological Determinism

Patients tended to identify with Orlikowski's Strategic Choice Model (Figure 2.1), where the technological deterministic stance is tempered by human intervention. A purely mechanistic, hardware-led determinism (Greaves, 1998 and Wilmot, 1993) was largely rejected. A typical example of this was evident in the interview with CTFEM8, who

although consumed with fear of the technology, was totally reassured by the radiographer, claiming 'she [radiographer] put me at my ease straight away' (line 28). The interactions were still technologically determined, but the 'impacts [were] moderated by the human actors and organisational contexts' (Orlikowski, 1992, p.4000). It was interesting to note however, that some of the radiographers (Radexp 3, 4, 7, 8 and Rad 6 and Rad 8) who had had scans themselves, learnt from the experiences and focused on moderating the impact still further in their own departments. This would provide an additional humanistic element for patients in their own departments, brought about by experiencing the procedure and gaining 'true presence' (Bernardo, 1998).

There were very infrequent references towards Prout's idea of Actor Network Theory (1996), where the technology itself can be said to have an element of 'agency.' Although MRFEM11(2A) and MRFEM12(2A) spoke of the technology using animate terms, while CTMALE13(2A) (line 40-43) was very uncomfortable interacting directly with an automated computer voice, the notion that the technology was in control rather than the radiographers was, however, rarely evident. There was a great deal of curiosity about the functions of the scanners and on occasions even experienced radiographers questioned if it was working properly (Radexp1).

Objectification

A very clear link was found with medical operationalisation (Barnard and Sandelowski, 2001, Rhodes et al, 1999). CTFEM11(2A) in particular, expressed a fear of what was going on since she felt that 'they [radiographers] are looking inside my body but I can't see it and I'm left wondering what is going on' (lines 42-43). Even with some idea of the systems in place, radiographers also had similar feelings. Rad 8 suggested that it wasn't

always a good idea for patients to be able to see the control room since they would feel similarly objectified. However, not being able to observe the staff may also be regarded as a convenience for radiographers, since it would hide any unprofessional (Radexp6) or deviant behaviour, and thus secure the 'dark secrets' (Goffman, 1959, p.141) of the imaging team. This point is further developed in the chapter under the heading of dramaturgy.

Other forms of objectification are also reflected in the findings. Naturalisation including the removal of clothes and 'own identity' was a common outcome and was reinforced by some of the radiographers in particular Rad 7. In addition, bureaucratisation was evident, not so much directly within the patient transcripts, although a high degree of compliance and resigned-self was noted, but more in radiographers' comments and the frequent mention of a 'conveyor-belt' process. Lupton (1996) considered it to be an expectation that the staff behaved accordingly, and although this was the case as far as the patients were concerned, radiographers' experiences suggested otherwise.

Evidence was found of epistemically disciplined patients (Cussins, 1996) with a very high level of knowledge with regard to the technology but not necessarily the procedure. The notion of cross-sectional imaging and the improved resolution of the images with respect to conventional radiography was common. Although this was not always the case, and indeed some major misconceptions were also present, this still does question Lupton's (1996) perhaps dated belief, (in view of access to the internet and increasing media coverage) that only a few middle class lay people acquire background knowledge of medical procedures.

Reference to the conveyor-belt process concurred well with the literature (Bowman, 1993), since this 'assembly line' (Benfield, 1979) system of working was evident on every summary sheet. It was also recognised within the radiographer population, to a greater extent than the patients, once again suggesting that this practice, although not overtly condoned, could also serve to protect the power of the professional over the lay person. It became apparent that the problems were not so much purely due to technological determinism, but rather, also had a relationship to professional discourse (Burbles and Rice, 1991). As Barnard (2001) expressed earlier in the study, the decisive factor that makes a procedure technological is not the hard technology, but the 'technique.' This is wholly dependent upon the user-context (Barnard and Sandelowski, 2001) and the praise for radiographers within the patients transcripts, although they were not identified by title, clearly contradicts the notion that the more professionals become immersed in technological products of science, the less they care about the recipients (Purnell, 1998; Mc Kenna Adler, 1990).

Patient difficulties

The main problems tended to centre around the confined space (Flaherty and Hoskinson, 1989). Although the noise of the MR scanner was recognised by many, and was often unexpected, it was regarded as more of a nuisance or inconvenience than a major factor. The phenomenon of sensory deprivation (Shellock and Kanal, 1996) was recorded within the codes of orientation and spacial-self, and this was also recognised by the radiographers. In addition, the position of the patient when entering the scanner did cause concern (Brennan et al, 1998), especially if entering head first. Even the radiographers working in MR regularly referred to this fact which has led to a change in practice in some departments (Rad 8). The study by Koechling et al (1996) found sex and body

weight to be the only significant factors in determining a successful scan, but they failed to attribute any of the problems to social issues. In contrast this study found that many other aspects were equally influential, with particular emphasis on socially constructed entities such as stories and myths.

The levels of apprehension were very mixed, with some interviewees experiencing no anxieties, while others were worrying about the examination for days or even weeks beforehand (MRMALE10(2)). The strength of emotion expressed showed that anxieties manifested themselves through social interactions in advance of the appointment (O'Connor and Cotter, 1998; Thorpe et al, 1990). Mac Kenzie et al (1995) claimed that the levels of anxiety were comparable with those prior to surgery, a claim that was substantiated on several occasions in this study.

Another major influence was the media (Clarke, 2001). This was hinted at in the literature, but appeared to play a pivotal role in developing preconceptions and misconceptions. The dramatic representation of television dramas were seen to cover the procedures with mystique and complexity, very reminiscent of the definition of technology (Caralee et al, 1999), and was summed up by Rad1 who stated that:

You can see a CT scan and the impression given is that it's a very sort of ...daunting, like a darkened room and the cross-lights are on, the laser-lights are bright and everything moves slowly, the patient is on death's door and there is dramatic music in the background.

(lines 167-170)

The highly common reference to the media reinforced the argument that 'most people get their education from the telly' (Rad 1, line 170). However, concurring with the Strategic Choice Model, it was still clear that many concerns or fears could be allayed by the radiographers during the interaction, thus making the encounter better (MRMALE12(2))

or occasionally worse (MRMALE10(2) and CTMALE13(2A) than originally anticipated (Charon, 2001) through media exposure. This shows therefore that the impact of the technology can depend solely on how it is used and portrayed rather than the deterministic design of the technology (Sandelowski, 2000). Radexp3 agreed entirely with this in stating that 'the equipment can be as big as you like as long as someone is there to hold your hand in inverted commas' (line 141-143).

Many interviewees reported feelings of isolation, especially in MR phase 2. This was despite unusual methods of trying to communicate, such as waving (Rad 8 and Rad 4) and making loud noises (Radexp8), which occurred in some departments, although interestingly, such techniques were either absent or not noticed by the patients interviewed. However, at the other extreme radiographers reported that some patients were deliberately ignored for the duration of the scan, 'don't speak to them at all' claimed Rad 6 (line 204). When under pressure of time some radiographers (Rad1, Rad 5 and Rad 7) admitted that they adopted a 'mechanistic approach,' recognising how impersonal the imaging procedure can become. With conflicting opinions and techniques it was not possible to confirm or deny Casselden's (1988) assertion that such interactions induced stress in radiographers, but it was clear from the patients' transcripts that more human contact, in whatever form, was an essential requirement. It does however suggest that Emrick's (1999) findings of poor or non-existent communication in CT departments can exist in some departments, although many of the CT patient transcripts would suggest otherwise.

Gendered Experiences

Despite attempts to gain equal numbers of males and females in each sample and each phase, the theoretical nature of the sampling strategy and the availability of the researcher could not achieve this. Nevertheless, there was a concerted effort to balance the gender bias in phase 2 of the MR interviews. More males than females experienced problems, but once again over such a small sample no generalisations could be made. It was however apparent when speaking to the radiographers, that they felt male patients tended to hide their feelings of fear, since they were expected to represent the stereotypical image of a 'macho' male (Robertson and Williams, 1998). Denying that they had any problems when in actual fact they appeared physically distressed (MRMALE1 and MRMALE3), and regular comments about males suppressing their feelings, meant that a few of these male patients would fit into the category of 'self-regulated participation in social encounters' (Goffman in Cahill, 1986, p.296). This would also account for the reason why MRMALE1 went to such lengths (regulating) by putting his feelings into context and suggesting to me that he still wanted to be regarded as masculine. This desire to present oneself in a good light, by concealing real fears, was recognised in the literature (Goffman, 1971; Mead, 1934).

This would also account for the fact that many patients persevered with the difficulties and adopted a resigned-self, using the strategy of saying nothing and thus maintaining a good self image. Accounts from Stillion (1995) and Diamond (1998) from the literature were also mirrored in the transcripts of MRMALE10(2) and CTMALE8(2); all were male patients. Within the sample, it is therefore suggested that male patients tended to adopt more self-regulation than females in order to match the expectations of society.

It is notable that the use of any positivist research paradigm would have failed to detect the presence of this phenomenon within the study.

Self

Different selves were identified as the study developed, whereby patients orientated themselves to avoid objectification (Purnell, 1998; Cooper, 1993; Locsin, 1998; Ozbolt, 1996; May and Fleming, 1997). The multiplicity of selves (Morrison and Burnard, 1991) was most apparent and the identity of the patient was challenged within each sub-category of self.

Physical self was the most obvious form to distinguish, where the direct fear of the technology was the main factor. Although some consideration should also be given to the vulnerability of patients, having to reveal their 'fragile' bodies (Davies, 1995) as alluded to by Rad 8.

Resignation of self was an interesting finding, from the examples given in the results, it was apparent that many patients felt not only subordinate to the radiographer, but also towards the technology, taking sedation if necessary (MRFEM11(2A)) in order to cope with the daunting technology. In all but a few cases, it was clear that these patients were no longer autonomous individuals (Lupton, 1994) and this contradicts Clarke's (2001) proposition that the concept of the totally submissive patient is disappearing. Certainly within the technological context of the radiology department this was not the case.

Questioning of self appeared to evolve out of lack of information and was further exacerbated by the stories of others. In addition, the noise of the MR scanner in

particular led several patients and radiographers to question if the scanner was functioning correctly.

Disorientation (Radexp 3, Radexp6,) and time deprivation were common themes in the patient interviews leading to a loss of spacial-self. This was in line with the thoughts of Shellock and Kanal, (1996) of sensory deprivation. The fact that MRMALE10(2) deliberately avoided acquiring any sense of location or bearings by averting his gaze and avoiding knowing the time beforehand may have only further compounded his loss of spacial-self.

Maintaining control in the Total Institution

The stories told by 'others' were interesting, and made preconceptions more 'concrete' (Morse and Singleton, 2001), even when, as found on a regular basis, these accounts were actually about completely different examinations. This was most apparent within CT interviewees, where the vast majority of these patients were clearly expecting MR scans. Nevertheless, these stories represented reality for many of these patients, thus colouring their metaphorical 'goggles' (Morrison and Burnard, 1991), and they often believed these stories more than the information sheets. Stories from 'significant others' were the most pronounced and since the criteria for a total institution (Charon, 2001; Goffman, 1959) were met, albeit for a short period of time (that is isolation from 'significant others,' plus control of the environment by powerful others (radiographers)) submissive displays were common.

Maintaining control was an essential factor in retaining a sense of self, many interviewees considered this to be crucial in explaining their fears. For MRFEM4, it was a matter of

'controlling the situation, rather than that controlling you' (line 45-46). When compared to other encounters in life, the difference was the total lack of control when inside the scanner, since you do not move yourself in or out, you are totally controlled by others. Even the account of the patient who regularly worked down man-holes and yet experienced great difficulties during his scan (Rad 6) confirmed this point. This lack of control (or temporary institutionalisation) was highlighted by all groups and even the radiographers working in these modalities claimed this was an issue when they had scans themselves.

Some form of control was 'enabled' with the emergency button. The button was rarely activated but nevertheless gave patients some degree of influence, thus diluting the environment of the 'total institution' (Goffman, 1959).

Other coping strategies were of a quite personal nature, with singing, counting and closing eyes being noted in many interviews, these were considered to be more types of distraction techniques, although they still enabled the patient to successfully complete the examination. Therapeutic touch (De Cann, 1988) was also a factor and was recognised in patient and radiographer samples. This desire for some regular human contact was the main recommendation and was found in many interview transcripts, notably within the radiographer experiences.

Patient networking

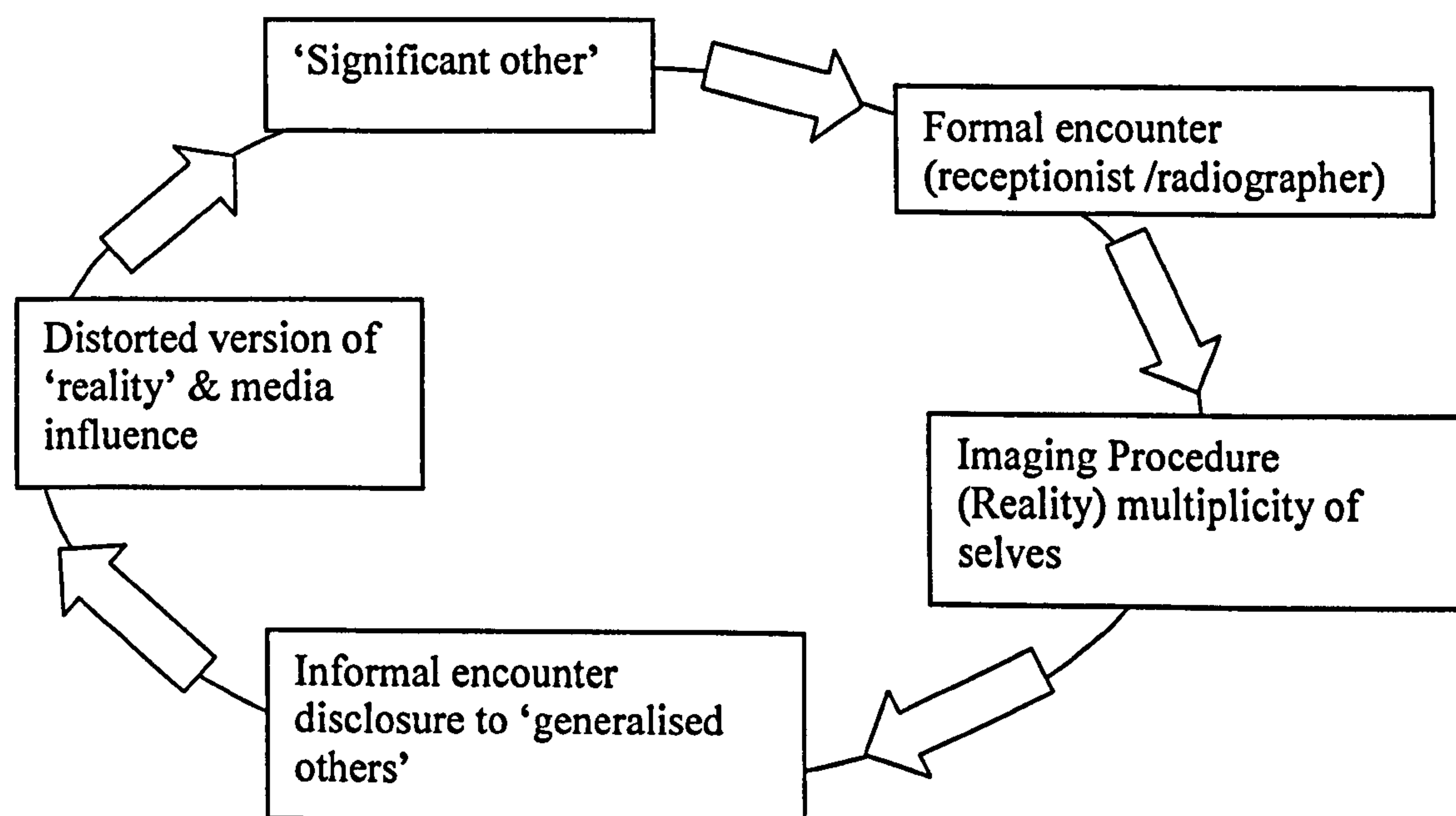
There was both formal (MRMALE4(2A)) and informal (MRMALE3(2A)), Radexp2, Radexp4, Radexp5, amongst others) evidence of patient networking throughout the patient interviews, and this evidence was supported by the radiographers' comments. The extent of this process was surprising, and although radiographers recognised its existence, few identified with the infrastructure that facilitated the dissemination of information. The formal system was selective in ensuring that only positive accounts were conveyed, but the informal mechanism was recognised as only disseminating poor or dramatised versions of the reality (Rad 6). The nurses who were regarded as significant others described procedures to patients, usually only on request (CTMALE3, CTFEM5) or, in their absence, to a family member or close friend but sometimes the detail was exaggerated or found to be factually incorrect (CTMALE4).

Receptionists, for the reasons stated in the previous chapter, were often oblivious of their role within the network, but often compounded erroneous beliefs before the patient encountered the radiographer. This first formal encounter was seen as important in conveying an objective description of the procedure, as was the role of information leaflets. However, if, as was the case with MRMALE10(2), the information was not supplied by the radiographer then further distortion of reality took place. The explanations given by the radiographers were understood by the patients, with the rare exception.

Interestingly, it was the patients themselves that made the contacts (Radexp2, MRMALE3(2A)) during informal communication with 'generalised others,' often 'the whole ward [were] talking about it' (MRMALE10(2), lines 363-364). This version of

reality would also be subjected to gendered experiences as outlined earlier. For many the actual scan was not as bad as they expected, but nevertheless the influence of this network in disseminating negative accounts of the procedure was very powerful. As Rad 4 stated 'If someone has a horror story to tell, you know it is much more exciting than telling about what has really happened' (Lines 234-236). One final section of the network was unveiled by a radiographer (Rad 4) who completed the conceptual 'loop' by suggesting that patients also informed the nurses about the procedures. In addition, radiographers were aware that nurses and other medical staff were often unaware of many of these procedures, making the stories more believable. This only served to further 'fuel' the range of concerns and expectations discovered in the study. Figure 7.0 shows this conceptual loop of networking.

Figure 7.0 Conceptual Networking of High-Technology Imaging Procedures



The data shows that the experience will alter as a result of the interaction, in this case with the technology (symbolic significance), and/or, the radiographers, making the 'reality' better or worse than expected (Charon, 2001). It should also be recognised however that the 'vehicle' that facilitates the transmission of information is composed of lay terms and analogies, giving patients a common language and understanding.

Recalling traumatic experiences

The suggestion that previous traumatic memories maybe recalled if the patient was experiencing difficulties was first detected in phase one and in the early literature. This was rarely found in the transcripts, although reference to visits to the dentist and war-fare were noted (CTFEM12(2A), MRMALE9(2A) and CTMALE8(2)). It is suggested that recollection of a previous scan (MRMALE4(2A) would be a normal occurrence, brought about by the familiar equipment. It was particularly interesting however, to observe that three radiographers (Radexp1, Radexp8 and Rad 1) all recalled previous incidents when they were feeling 'claustrophobic,' even though these events occurred many years ago, as was the case with 'David' in Luck et al (2000). It was not possible to come to any firm conclusions about this phenomenon, given the sample size and the opposing views of Radexp4 and RAD 8. They were both adamant that they had never heard patients mention previous memories while having a scan. It should however be noted, that with such a paucity of research in this field, perhaps the question had not been asked before. The researcher felt this issue was worthy of further research at a later date.

Claustrophobia

The whole issue of claustrophobia was a complex one. The word was used interchangeably and lost its true meaning when it had been around the conceptual

network many times. Incidents of 'claustrophobia' were noted regularly for MR but only occasionally for CT examinations. Rad 8 tried to put the term into perspective by defining 'true' and 'non-true' claustrophobics in the results. Although this was a useful contribution, it could equally be viewed as another example of a radiographer naming and categorising patients (Clarke, 2001; Jeffrey, 1979) using local language.

Other Imaging Modalities

Few patients recognised the extreme difficulties with imaging technology elsewhere in the radiology department, since as stated previously, this would not be unexpected from a small sample. However, some had been made aware of the 'more unpleasant' procedures from 'generalised others,' typically being patients. The barium enema examination did however feature on a regular basis, where the undignified revealing of 'self' (CTFEM12(2)) coupled with the intimidating technology (CTMALE7), even though the operator was in the same room, contributed towards a poor experience for many. Angiography also featured with further evidence of networking from (MRMALE10(2)), who declared 'well I was told it would be scary, ...some patients saying how awful it was' (lines 363-365). However, the most significant response with regard to other technology came from MRMALE4(2A) who graphically described in the results chapter his interaction with radiotherapy technology.

As expected the radiographers added to this list of modalities, which once again demonstrated their awareness of the potentially deterministic nature of imaging technology. Radiological procedures in Cardiology, Angiography, PET scanning and Breast screening were considered to be problematic, due to the unknown nature of the procedure (Radexp6) and the physical presence of the technology.

The Role of the Radiographer

In identifying the technological experience to be similar to the Strategic Choice model (Figure 2.1), the radiographers' role was seen to be critical within the interaction. Although a few strictly deterministic technological cases were identified, it was the user-context of the radiographers that helped to shift the experience towards a more dualistic approach.

By recognising the extent of the problem and agreeing that their own imaging procedures were impersonal, some radiographers were using humanistic values and qualities, to compensate for the disembodied effects of hard technology (Nagle, 1998).

Radiographers did not recognise technology as neutral (Carnevali, 1985), this was apparent from their own career pathways and their choice of imaging modality. However, there were occasions when, due to external pressures, this stance was taken (Rad 1) and increased the 'impersonal nature' (line 130) of the scan, thus the technology was used purely as a mechanical servant (Laing, 1982; McConnell, 1991). Rad 1 and Rad 8 felt that this further removed them from contact with the patient and facilitated the conveyor-belt mentality mentioned earlier.

The requirement to scan more and more patients in shorter times (Rad 2 and Rad 8) was an indicator of the 'demand pull' and 'technology push' theory (Freeman, 1987; Robertson, 1998) and the group were very pessimistic about the possibility that this situation would change. Interestingly, even some of the patients agreed that the situation would not alter since there was no time (CTFEM5 and CTMALE6). This continued belief by some patients and radiographers would be unlikely to persuade policy-makers to evoke structural change of the 'historical template' (Orlikowski, 1991; Barley, 1986).

This may account for the fact that CT decentralisation was shown to be slow to evolve in Barley's (1986) study and was still not complete in some departments where negative perceptions (Rad 1 and Rad 5) still dominated. There were however a few optimistic views to provide some balance to the argument (Rad 3 and Rad 8).

Facilitating Authority with Technology

Although all the radiographers identified a conceptual boundary, in addition to the physical one between the patient and the scanner, there wasn't any exclusive agreement from the patients. This was especially the case in the CT departments, where perhaps the more open nature of the scanner reduced 'physical feelings' of isolation from the staff. This was not the case in MR and often the problems were compounded by the radiographers walking out of the room without informing the patients. The radiographers did not routinely introduce themselves to their patients, but were acutely aware that as a consequence patients did not know who they were, 'partly ...because we don't introduce ourselves' (Rad 6, line 127-128). However, by wearing the uniform of authority they still ensured that 'sites of differences [remained] sites of power' (Barrett, 1987). This stance, within a technologically determined context, suggested that it may be in the interests of radiographers to further polarise this boundary (Barnard and Sandelowski, 2001).

To some extent this would substantiate the notion that technology acts as merely as a 'prop' to facilitate social action (Prout, 1996; Timmermans, 1998) and enables the maintenance of referential supremacy, from which the term 'ontological choreography' was derived in the literature. It is unclear however, how successful this perceived strategy was, since the patients failed to recognise the radiographers as imaging professionals and the radiographers themselves believed that technology had not

advanced their status in the eyes of the patients. As Rad 4 stated: 'we are definitely considered as just button pushers' (lines 86-87).

There was a notable fascination with the equipment (Rad 8 and Rad 3) and its associated imaging capabilities (Rad 7, Rad 5 and Rad 2) and the enthusiasm of the radiographer sample could not be questioned. A great deal of empathy was expressed for the patient, since they had little idea of what the procedure entailed. A typical remark from Rad 1 noted that 'for them [patients] it [scan] must be 10 times worse' (line 211). These statements recognised the perceived barrier between technology and patient care (Barnard and Sandelowski, 2001) and recognised that the experience for the patient could be more traumatic due to their unfamiliarity with procedures. Rad 8 made the point about computer-driven imaging technology, suggesting that since the radiographer increasingly has a limited role, the technology would then acquire more 'agency' (Prout, 1996), leading to a more deterministic experience for the patient. Although a dual approach was advocated by the radiographers (Strauss et al, 1985), the technology as a facilitator of authority was rarely credited with its own part in the interaction.

Objectification

Surprisingly, the level of objectification expressed by radiographers who had had previous scans was very high. These feelings were largely unexpected (Radexp4) and out of character, making them feel uncomfortable in the presence of their peers. The level of background knowledge would be expected to be high, but this wasn't always the case, since some radiographers had not even seen the technology beforehand. This led to feelings of naturalisation, and a strong desire to comply, that is bureaucratisation (Rhodes, 1999). However, the reciprocal anticipation of the staff to behave in the

expected manner (Lupton, 1996) was often found to be lacking (Radexp5 and Radexp6), and this conflicts with the findings from the patient interviews. This may be explained in two ways, firstly there may have been less respect for the supposed authority of their peer group by the making of professional comparisons. Secondly, since patients would be unlikely to detect any unprofessional behaviour, especially as the majority could not see the attending staff, they could not monitor the behaviour against the expected norm.

Technology versus Patient Care

All the radiographers referred to the necessity for patient care in a high-tech environment, with one sceptical comment from Rad 1, inferring that it was what he should say, rather than what was done. This questions, if, as Burbles and Rice (1991) believe, that such professional discourse can actually equate to less humane care. When investigating why they chose their imaging modality, the answers ranged from relief of boredom (Rad 5), a fascination for the technology (Rad1, 2, 6, 7, and 8), and only one respondent (Rad 3), stated that the satisfaction of helping claustrophobic patients was the first attraction. The comment that a certain type of staff were required in these imaging modalities (MRMALE11(2)), although their specific qualities were not identified, was reinforced by the radiographers. The evidence indicated that in order to bridge the perceived dichotomy, both technological and humanistic qualities were essential.

Mc Connell (1998) placed nurses at the midpoint of a technologic-humanistic dualism and Castle (1988), a radiographer, hoped for a shift of emphasis away from the medical end of the spectrum (figure 2.4). Direct comparisons were not possible, since different questions and criteria were used, but on the evidence of this study it is suggested that radiographers have yet to cross the midpoint of the continuum.

Professional Identity

The perceptions of the radiographers were excellent from the patient population but rather poor from the radiographers themselves. In addition, it was concerning to note some references to poor practice and communication allegedly present in other colleagues.

Although radiographers tended to introduce patients to the equipment (this is evident in the clear explanations given) as advocated by Bowman (1993) they never identified themselves, therefore the self-image referred to by Simon (1999), was often absent. Each radiographer recognised this, and yet many felt that they could do little to change it. The complete lack of identity was also confirmed within the patient group, where the radiographers were called 'nurses,' 'girls' and 'doctors.' However, it was not only their image in the eyes of the patient that concerned them. Frequent comments about how other health care workers viewed them seemed to compound their identity crisis. However, when presented with an opportunity to describe to a layperson what a radiographer is, many struggled, suggesting that this task is rarely undertaken.

Socialisation of the high-tech radiographer

There was a degree of negativity with respect to the responses about role models. While all radiographers wished to aspire to the skills and knowledge base of their role models, some questioned if they still existed (Rad1), while others felt they could never match their standards. Presumably these negative attitudes would be adopted by newly qualified radiographers, ensuring that there was little progress for the profession. This was an important point, since without an effective role model, complete socialisation cannot be acquired (Moorhouse, 1992). The use of parochial language in some of these departments, with the example of MP and TMP (Rad 5), would also form part of any

socialisation (Moorhouse, 1992) of radiographers within the imaging department. This type of classification was recognised by Clarke (2001), as prejudiced and biased in nursing work. Its existence in radiography has never been formally investigated. Jeffrey (1979) also viewed such classifications with suspicion, since they were socially constructed and did little to advance the profession. However, Murcott (1981) considered a patient taxonomy to be a type of coping strategy for staff to get through the day's work, and the casual explanation of Rad 5 would suggest this might have been the situation in her CT department.

In line with Barley (1986), there was a belief that there was a role reversal in CT with radiographers performing radiologists' tasks. Since MR is a newer technology and the radiographers felt they had gained more respect from the clinicians, especially the consultants, the 'trigger for structural change' (Orlikowski, 1992, Figure 2.2), was metaphorically 'primed' towards greater radiographer autonomy. This was supported by the fact that throughout my time spent in these departments, I rarely saw a radiologist, and yet Rad 1 disputed the above change, claiming a mechanistic, assembly-line culture still dominated in these imaging modalities:

There is complacency in the profession which I don't necessarily think is just radiographers' fault because we have been kept in our places for years by radiologists and again that's not having a go at them. I mean, I cannot press any buttons on any machine or scanner without their say-so. People have spoken about autonomy over the years, we haven't got it, it's as simple as that. Any radiographer who tells you he is autonomous is a liar. The by-product of that has been this complacency, just come in here 9 to 5, get told what to do, do it, get through the production line of patients and go home and forget about it. I would say 95 percent of radiographers are like that.

(lines 38-45)

On this evidence, any claim that radiographers have professionally achieved Porter's (1991) fourth stage (Table 3.2), that of *formal overt decision making*, would be

dismissed. But perhaps autonomy will never be achieved with a reversal of roles since, as May and Fleming (1997, p.1095) noted for nurses, the profession should be focussed on creating a difference, rather than competing for the 'same turf.' It is only with differences that power can alter (Barrett, 1987).

Radiographers and Self

An additional sub-category of self was developed from radiographers' experiences, that of professional self. They felt being imaging professionals themselves, they should know better. Reflecting on this professional self Radexp8 (lines 55 -57) declared, 'I am a radiographer for God's sake, I put people through it, they manage it so I have got to do it.' However, even with experience of the technology, the procedure was still daunting as mentioned by MRMALE10(2) who had four previous scans, and also evidenced by the reaction of the CT superintendent (Radexp8).

The benefit of having a scan was reiterated several times by radiographers, they were in effect 'taking the role of the other,' not in a covert manner as outlined by Mead (1934), but rather an overt manner, that enabled them to take the 'true presence' (Bernardo, 1998) perspective of the patient. Several different but sequential roles were noted by the patients and the radiographers and they were, as Rad 3 put it, fitting into the role of whatever the patient wanted them to be. This would mean that 'self' was being constantly redefined (Goffman, 1959) and produced 'anew' in each and every interaction.

Section Two

Capturing and further developing typologies was a powerful analytical approach for making sense of and reporting the qualitative data (Patton, 1990, p. 397). The typologies, which served to reduce the data, were scrutinised for internal homogeneity, that is, how the data held together in a meaningful manner, and also external heterogeneity, to ensure that the differences between them were clear and bold (Patton, 1990).

Patient Typologies

Being developed during the analysis of the data, the typologies were both indigenous and analyst-constructed. Using the concepts derived from all the data, typologies for the experience of high technology imaging were developed. The full list of concepts for each typology are tabulated in Appendix 11. By portraying these, and labelling them as appropriate, it was possible for the researcher to be clearer about the interrelationships and thus develop a conceptual framework (Miles and Huberman, 1994). Each typology is now discussed.

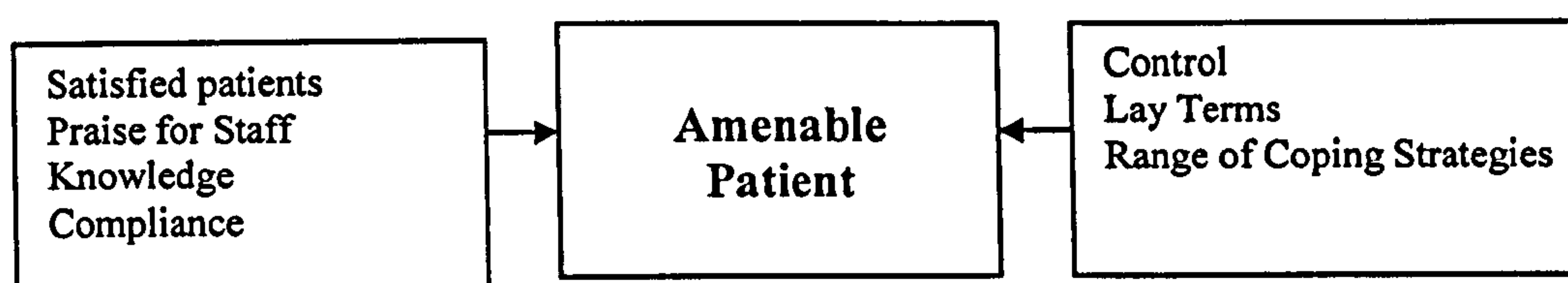
Amenable patients

The level of satisfaction, especially in the CT department, should not be overlooked in favour of the more dramatic findings of the research. Despite the difficulties experienced by some patients, the radiographers were constantly praised for their care and skills. Patients showed a good level of knowledge and expressed a desire to comply as much as possible, generally demonstrating a submissive-self and deriving the name of 'amenable patients.' Concerns were regularly allayed, or occasionally compounded by viewing the technology, thus demonstrating a link to symbolic significance. The interaction with the

radiographer assisted in dispelling distorted versions of the reality brought about by the varied sources of information and expectation. Lay terms were seen as a useful adjunct to aid understanding and meaning. Finally, if control was maintained, often with the aid of coping strategies and human contact, then the outcome was a very amenable patient.

The concepts that construct this typology are represented below:

Figure 7.1 Typology of the Amenable Patient

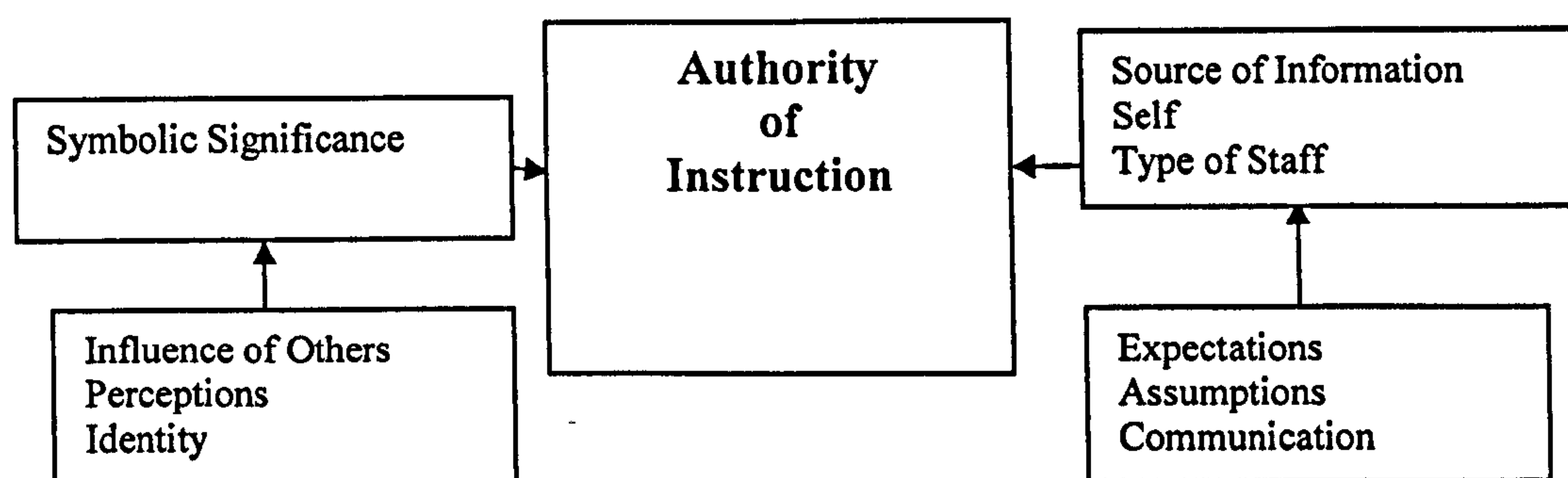


Authority of Instruction

The authority of the information source varied from a generalised other (patient in the next bed) to significant others (family members or medical staff). This often led to false expectations and assumptions, in particular that all scans are the same, and that if they had a previous scan, the patient would automatically know what to expect. The information from significant others was often conveyed in a pictorial manner (drawing in the air) and this type of presentation was also requested on the information sheets, to show that the MR scanner was not closed-in. The media portrayal of the technology was influential and tended to dramatise the procedures. It was apparent that there was a need for a particular type of staff; that is with both humanistic and technological skills, and the method of instruction to the patients during the scans varied. The diverse and highly

novel methods of communication emphasised how importantly the radiographers viewed the element of human contact. From immersion in the data it was possible to place specific themes as a 'higher order concepts.' For example, in Figure 7.2 below, it was evident that the influence of others, perceptions and identity all related to symbolic significance which ultimately led to the derived typology. Similarly, expectations, assumptions and communication were all brought about by the staff, self and sources of information.

Figure 7.2 Typology of Authority of Instruction

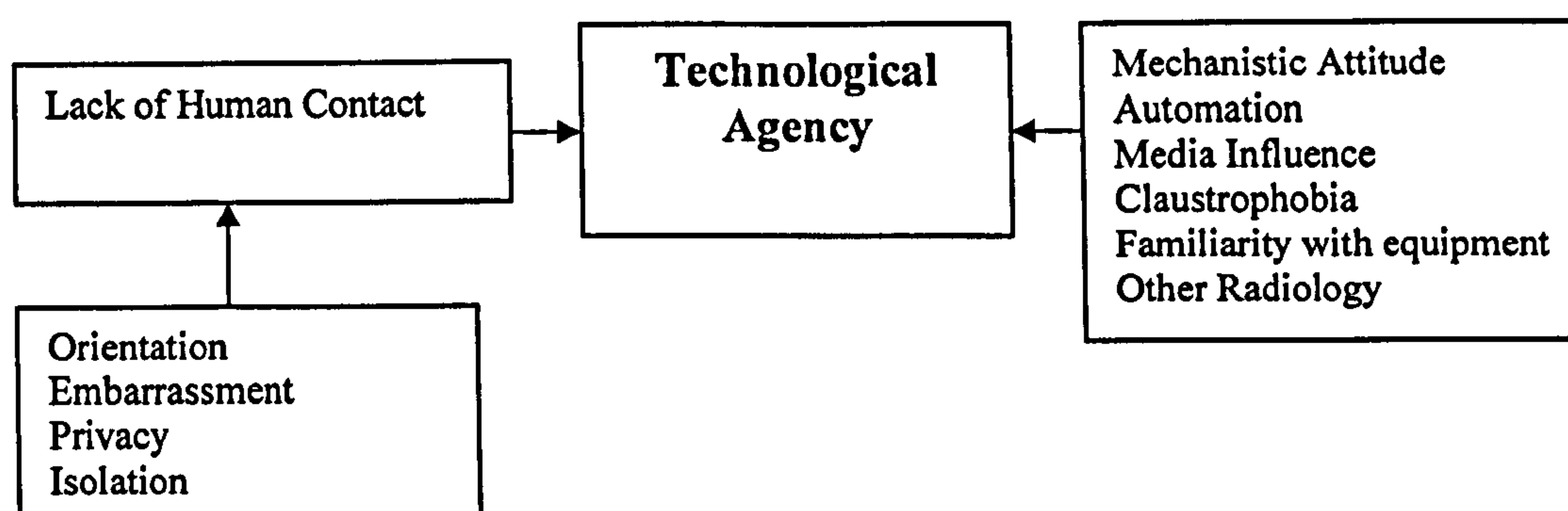


Technological Agency

The media depicted imaging technology as strictly deterministic; this once again led to incorrect expectations and misconceptions. Isolation was noted throughout the study but was particularly evident as the research developed. This was due to the loss of human contact, and in particular the conveyor belt process, resulting in embarrassment and occasionally loss of privacy, showing the importance of the user-context to moderate the hard technology. The physical presence of the equipment produced a submissive, but nevertheless fearful reaction in some patients, and the symbolic significance reflected that the image it created became their reality. Being familiar with the equipment could, it was suggested, reduce some anxieties (Rad 8). Maintaining control was essential despite the

presence of claustrophobia (both 'true' and 'non-true') and disorientation. Control was 'enabled' with coping strategies and the awareness of the location of the imaging staff. It was felt that the almost complete automation of computer-driven imaging technology served to only 'distance the care-giver from the care-receiver' (Mc Kenna Adler 1995, p.478). This typology is illustrated in Figure 7.3, where the lower order concepts on the left of the figure are all associated with a lack of human contact. The concepts on the right are in no particular sequence, but each one gives a technological, rather than a humanistic, emphasis to the procedure.

Figure 7.3 Typology of Technological Agency



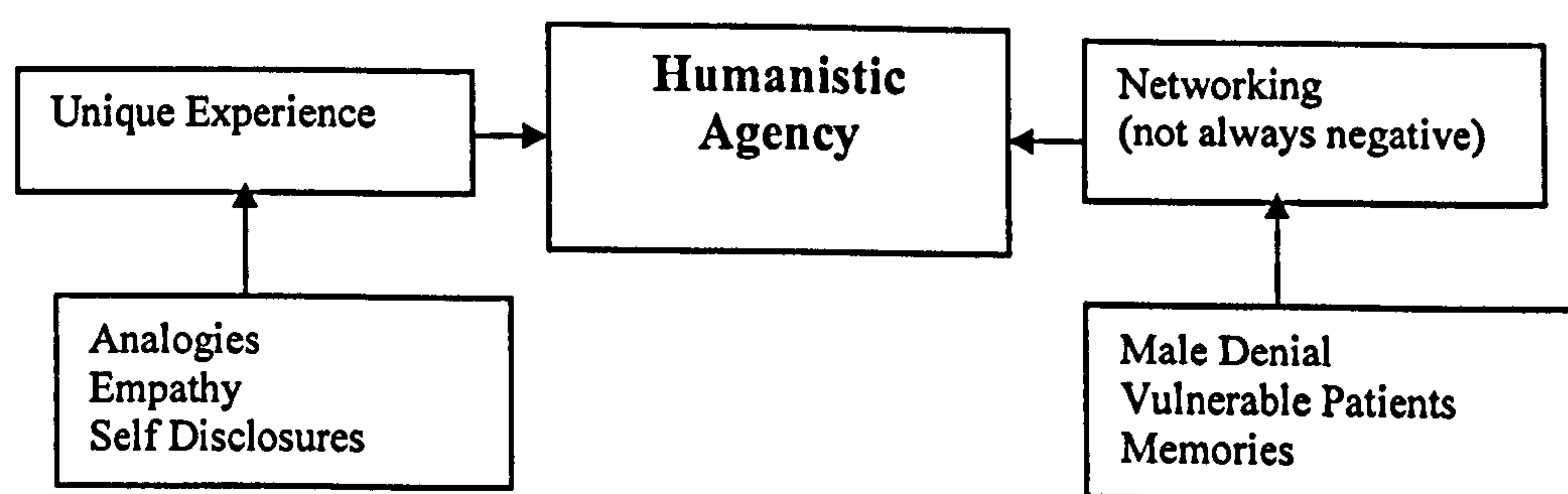
Humanistic Agency

Empathy for other patients was a dominant theme throughout the study, illustrating a concern for vulnerability within some patient groups. There was inconclusive evidence of memories being connected with the imaging procedure, although those recorded were interesting and often extreme. This was also the situation with male denial, where some male patients tended to readily adopt self-regulatory behaviour. Media influence was responsible for creating socially constructed preconceptions and the network facilitated

their continued existence. Since analogies and lay terms added a shared and common meaning to the information there was some reduction in the impact of medical definition.

The multiplicity of selves was evident with several types of self being exchanged during the encounter. Loss of human agency was exacerbated if a mechanistic approach was taken by the radiographers, especially when working under pressure, leading to disjointed continuity of care and a lack of human contact. Patients did not associate the imaging professional with the term 'radiographer' but still appeared to respect their authority, this was despite the fact that the radiographers thought the patients viewed them in a poor light. Figure 7.4 illustrates the construction of this typology. The range of emotions on the right hand side enhanced the networking process. Despite this the imaging procedure was still considered to be a unique experience developed through self disclosures, empathy and the use of analogies.

Figure 7.4 Typology of Humanistic Agency



Radiographer Typologies

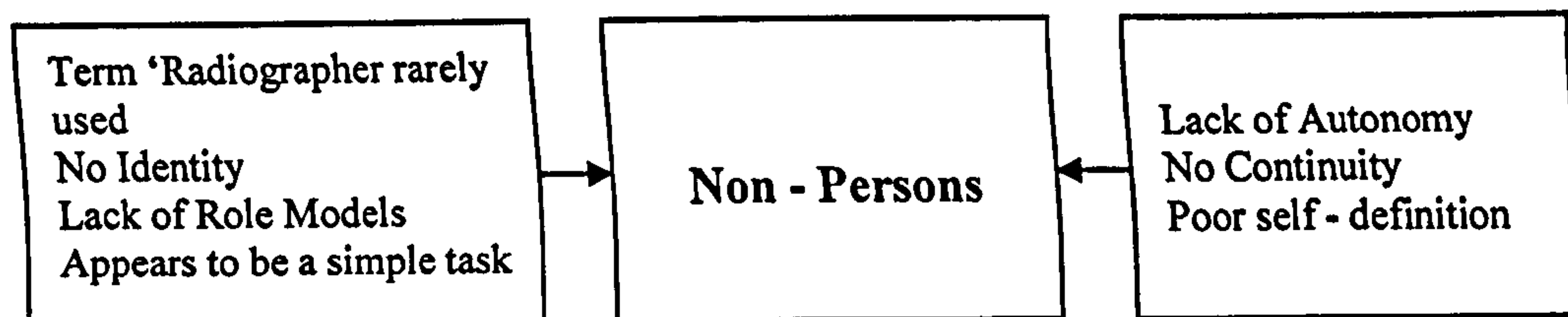
Three radiographer specific typologies were extracted from the data and are tabulated in Appendix 12.

Non-persons

The description of 'non-persons' (Davis, 1959), of being a means to an end, where the characteristics of those persons were unimportant, was thought to be particularly appropriate in acquiring internal homogeneity from these concepts. In addition, it was tested on some of the participants as outlined in the results and confirmed Lofland's (1971, p.34) belief that if recognised by the participants themselves 'the observer can be reasonably confident that he has tapped into extant patterns or particulars.' Rad 1 agreed totally with the 'label' and with respect to the fact that radiographers are not permitted to disclose the result of the scan to the patient, he remarked, 'I'm not allowed to speak to patients in that way, I just do my bit' (line 95). Other references suggested a diminished role in the medical team (Rad 7, line 78) since 'you are [just] a radiographer.' The most appropriate concepts were the obvious lack of professional identity, so striking within the patient interviews, coupled with the perceived absence of good role models. This also contributed to poor self-definition and the belief held by some that the scanning process was a simple task. As Rad 4 (line 82) noted, it must appear to others that we are not doing anything other than pressing the odd button. The fact that radiographers only explained the process, took the scan, and then sent the patient straight back to the clinician (Rad 3), clearly showed the transient nature of the 'hit and run carers' (Reeves,1999), within the patient-radiographer interaction.

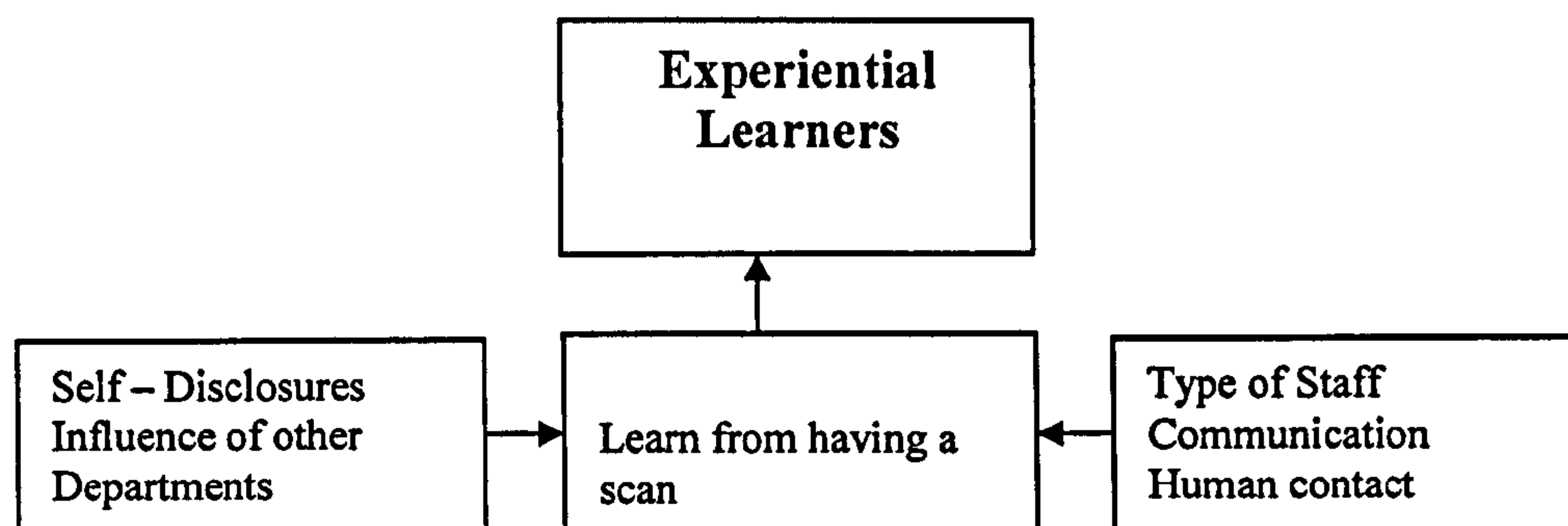
This typology is illustrated in Figure 7.5 below as a more straightforward construction:

Figure 7.5 Typology of Non – persons



Experiential Learners

It was a strong recommendation from the radiographers, and in particular those who reported their own experiences, that all radiographers working in CT or MR should have a scan themselves. To have had the desire to reveal the problems encountered during their scans, often many years ago, demonstrated the depth of feeling. This experience enabled them to make appropriate disclosures (Rad 1, 6 and 8) to their own patients, and in addition by visiting other departments, both good and poor practice could be compared, thus making them experiential learners. It was felt by the group that such experiences could only improve the imaging procedures in their own departments. By learning from others the radiographers could, in effect, compensate for the lack of effective role models and assist in configuring the 'professional-self' towards the needs of the patients. To reiterate the thoughts of Radexp6 (lines 68-69) 'I was very keen on patient care having been through it [scan] myself.' The typology configuration shows that the most influential concept is personal experience and this is illustrated in Figure 7.6

Figure 7.6 Typology of Experiential Learners

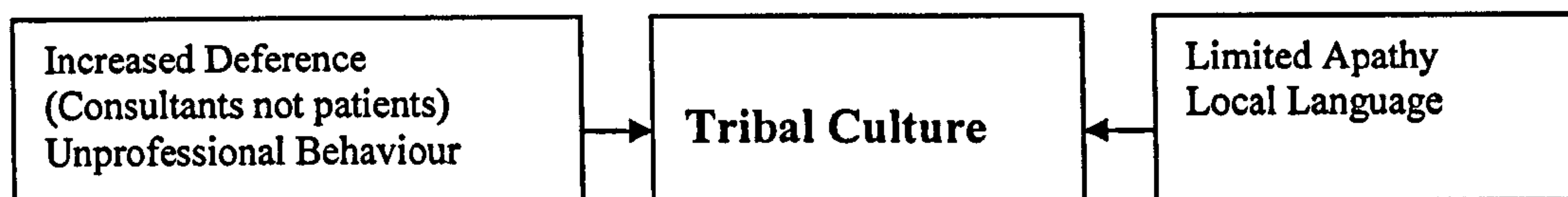
Tribal Culture

The nature of the initial attraction to the profession was very ambiguous with some radiographers not choosing radiography as their first choice of career. Likewise, reasons for movement into CT and MR were not clear, with patient care appearing to be a secondary consideration. It was also recognised by other colleagues as a fast-track towards promotion. The selection process would therefore presumably lead to a particular type of person, as found in the data, working in these modalities.

In identifying a 'local language' and a patient taxonomy within a few interviews, it was apparent that a high technology imaging culture could exist. The novel methods of communication were not, from the experience of the researcher, evident elsewhere in radiology. It was the radiographers themselves that alluded to evidence of unprofessional behaviour since it became apparent that patients would not necessarily be able to detect this. Although there was evidence to support a role reversal in CT with more deference coming from consultants, especially in MR, others still rejected any claim towards autonomy. There was also limited apathy, evident in the belief that the situation could

not change, together with no indication that imaging professionals would promote the profession in a different manner in the future. This relationship is demonstrated below:

Figure 7.7 Typology of Tribal Culture



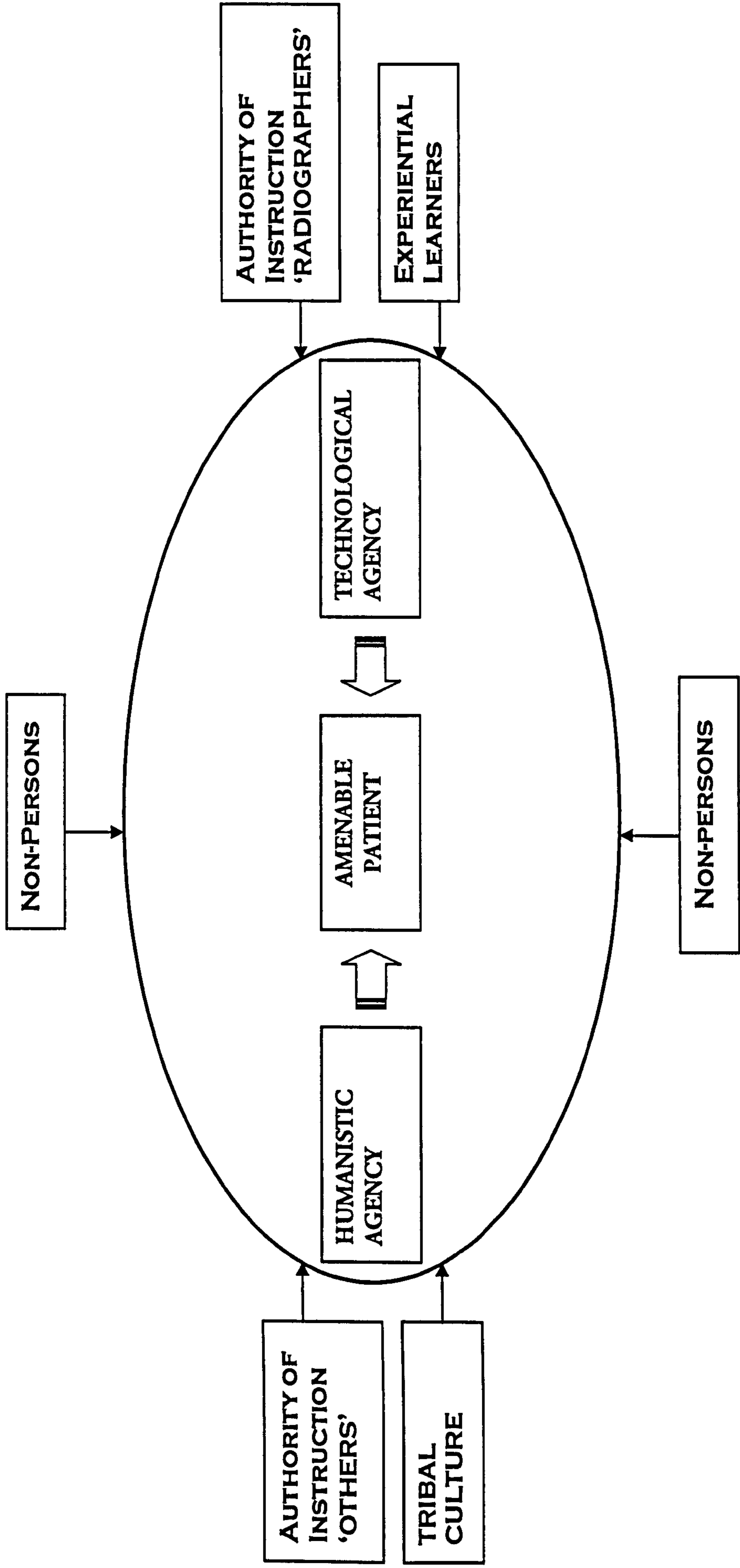
Model of humanistic Interaction

By merging both the radiographer and patient typologies together, the complete model of the humanistic interaction with medical imaging technology was derived. The model represents a simplified version of the derived typologies and should be considered together with the concepts that formed the infrastructure for each typology, that is Figures 7.1 to Figure 7.7 respectively.

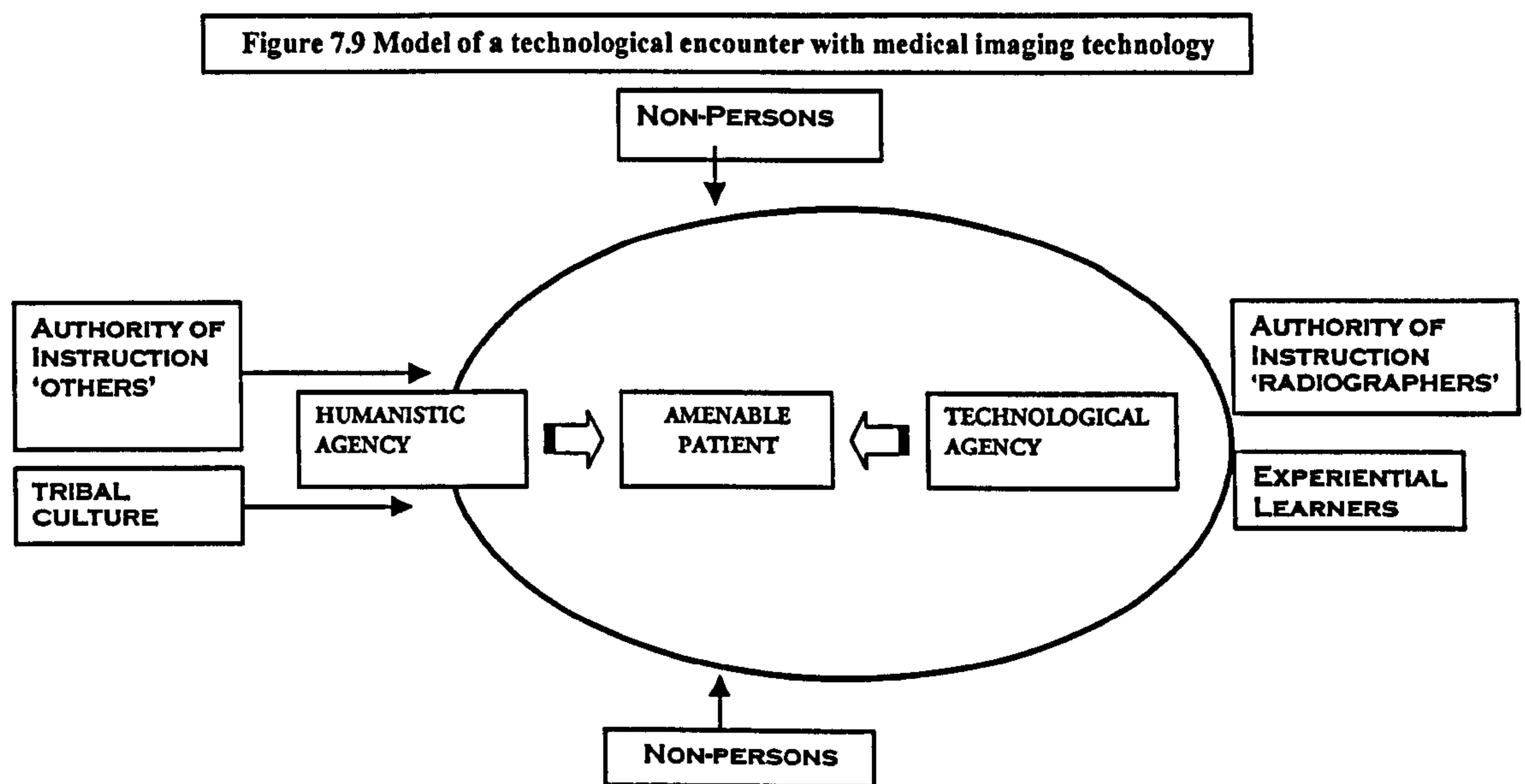
Explanation of Figure 7.8 (overleaf)

The model (Figure 7.8) illustrates that the patient is at the centre of the technological-humanistic dichotomy, and the patient is primarily influenced by both technological agency and humanistic agency. These three entities are the focus of the experience within the high technology imaging department. If the external (outer ellipse) influences are equally applied, a dualistic approach towards the scanning experience can be achieved.

Figure 7.8 Model of the humanistic interaction with medical imaging technology

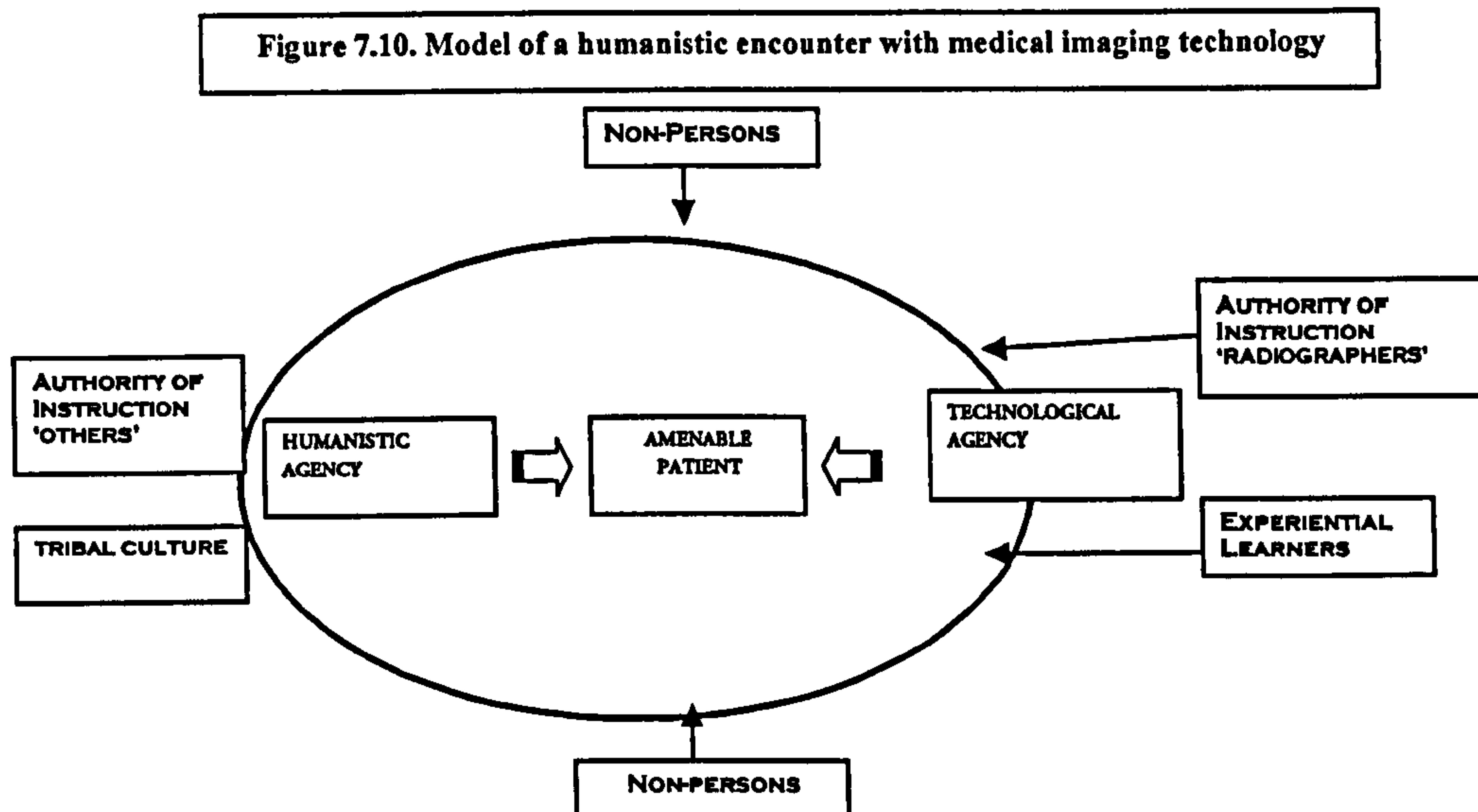


If however, the external influence of any the four typologies is substantially greater than the others, a more humanistic or technological bias will prevail respectively. In the first scenario, the authority of instruction comes from 'other' less objective sources, and a tribal culture is dominant. Therefore the focus shifts towards a more technological and therefore deterministic encounter. This is shown below in Figure 7.9: *The model of a technological encounter with medical imaging technology.*



In the opposing scenario, the greatest influence comes from the radiographers explanations, and since they have also experienced the scan themselves they are more aware of the need to moderate the deterministic characteristics, with self-disclosures and regular human contact. However, it should be noted that the typology of 'non-persons' had no impact upon the imaging experience since the status of the radiographer was not shown to be important to the patients.

This is outlined in Figure 7.10 below: *The model of the humanistic encounter with medical imaging technology.*



Section Three

Symbolic Interactionism

Although now considered as a perspective within this chapter, Symbolic Interactionism has been an integral part of the study and assisted in developing interview questions and sensitising concepts. It has therefore not only served as a unique perspective within social science but also a guide in focussing the direction of the study.

Self

Taking a micro-sociological outlook clearly demonstrated that humans not only acted back and forth (Charon, 2001) but also interacted with their selves. The range and frequency of 'selves' in the data concurred with the assumption made in the literature, that self can be regarded as a synergy of human thoughts and feelings. It was the

multiplicity of selves that was most obvious, with some patients having feelings of resigned self, physical self, questioning self, and spacial self during the procedure. For example, CTFEM2 who was mildly apprehensive at the (incorrect) thought of having an MR scan, moved from a concerned to enjoyable sense of 'self' once she was aware of her misconception. Self was a process and not a structure, although tenuous links to structural change within the radiology department were also explored. Several interviewees stated that it was largely what other people said rather than the experience itself that produced concerns. This agrees with Charon (2001) and facilitates the conceptual network.

Social Objects and Reality

Whilst still agreeing with the claim that there is no one 'true' reality and that radiography is a mixture of pure science and social science, three entities of 'reality' were apparent in the data. Similar to the illustration of the pain threshold study (Zborowski, 1952), there was no physiological reason why one patient would have found the experience more traumatic than the next, provided that it was a similar type of non-invasive scan. There was the objective reality of the scan provided mainly by the radiographers or information leaflets, the socially manipulated version of reality, as referred to in the conceptual network, and finally the individual interpretation of the imaging procedure. If a clear explanation was provided, i.e. the symbolic gestures between the radiographer and patient were understood with common meaning, then the objective reality would be similar to that experienced (own interpretation) and the outcome would be a satisfied patient.

If however information from 'others' altered the version of reality, for example MRFEM9 had her expectations of the scan tainted by 'awful stories', then she presented

with concerns and no impression of the objective reality. The actual scan may then differ considerably from the stories portrayed, with the same patient then expressing relief that, 'it was a lot less than I expected' (line 155). In addition, if there was no common understanding of the verbal explanation (objective reality) it could not be regarded as a symbol according to Mead, (1934, p.149) since 'the symbol must arouse in one's self what it arouses in the other' individual. This was the situation with CTMALE7 who 'couldn't take it all in' (line 34). He therefore did not know what to expect and his own interpretation was one of fear, vowing never to have a scan again. The variation in patients' responses can be explained since they had all responded differently according to defined perspectives acquired from their reference group (Mead, 1934).

The social manipulation was brought about by social and cultural (Rad 5) symbols, that were not established in nature, (Charon, 2001) and conveyed in lay terms with the use of analogies. These expressions were likely to be understood and therefore, for some patients, they carried greater symbolic significance than the information leaflets. As indicated by Miles and Huberman, (1994) the use of analogies pointed to regularities in the setting.

There appeared to be less social manipulation for the CT scans, this was despite an absence of information leaflets and some novel methods of illustrating what the scan involved. This was however balanced by clear understanding of the radiographers' explanations, although even here there were still references to the deterministic technology (CTFEM1, CTFEM2, CTFEM4 and CTFEM 7). The common expressions of 'long tunnels' and 'claustrophobia' were most often, although not exclusively, associated with the socially constructed version of reality of the MR scan.

Social Objects

The physical interpretation of imaging technology was acquired through the symbolic significance for that particular individual. To some radiographers, a picture of the scanner would, as expected, create an immediate thought of work and this was the case especially in the radiographer experience interviews. However, many stated that the picture conjured up thoughts that were identical to those of the patients. It was interesting to note some common expressions between radiographers and patients thus showing some similar understanding or a salubrious territory (Sandelowski, 1991; Holmes, 1992). This is in agreement with Barley (1986) who felt that CT scanners were defined by the context of use. That is to say, they are social as well as physical objects. The idea of labelling the scanners 'Stargate' (MRFEM4) or describing them with strange analogies such as 'wood-peckers,' 'ship' and 'star trek,' could therefore be given some credibility from the patients perspective.

It was thought that expressions used earlier in the study that were strange and unique were misrepresentations of the technology and that the patients failed to recognise the technology for what it was, that is a CT or MR scanner. While this may indeed have been the case for some, it was not for others. This point was made when the radiographers themselves also mentioned similar words such as 'washing machine' and 'port-holes.' This showed that like the example of the 'chair' given by Blumer (1969), the impression of the scanner is not as a fixed device but a social object with different meaning.

The symbol of the scanner was on occasions regarded as a powerful tool, for CTMALE2 for example, it was a cancer scanner, a common perception in patients according to Rad 5 and Rad 6. The image of this technology also had alternative interpretations. The

scanner represented a covert scale of illness (Rad 1). Known to patients, radiographers and policy-makers, but never discussed in this way, was the fact that the more technological the procedure the more serious the illness. Tentative links with Glaser and Strauss (1965) *Awareness of Dying* are inferred. Even thoughts of impeding death with analogies of a crematorium (Rad 5 and Rad 8) or electric chair (Radexp8) were expressed. This demonstrated that the group defined the technology according to the line of action they were about to take towards it (Benzies and Allen, 2001).

The usefulness of the analogies to the researcher and, in particular in conveying a symbol in the interactions, has been mentioned previously. One final analysis of them indicates that they fall into three distinct categories. The first was positive; encouraging soothing thoughts such as 'being inside the womb.' The second was negative, involving terms such as 'coffin.' The third was neutral; with references to the London Underground, which in itself may be a positive or negative encounter. The range of analogies emphasised the uniqueness of the procedure. Being socially developed they further endorsed the idea that as symbols they were used effectively to communicate common meaning and understanding within patient groups.

Symbolic significance was brought about by pictorial representation MRFEM10(2A) and MRMALE4(2A) had 'pictures in their minds.' CTFEM6 had the procedure explained by a nurse drawing a picture in the air, after which she declared '[only] then I realised what it was' (lines 19-21). Once again this showed that shared meaning is the very essence of this perspective (Mead, 1934). The need to imagine what the technology looked like was important, with many patients requesting a picture of the scanner on the information sheets and some regularly telephoned to ask about the physical appearance of the

technology. Conversely, if the impression created was one of fear, due to social manipulation, or previous traumatic experiences, as was the case with MRMALE10(2), avoidance strategies may have been used to ensure that there was no visual contact with the scanner before, during or after the procedure.

Taking the role of the other

Taking the role of the other can be considered for two perspectives. Firstly that of the patient having the scan, who is trying to maintain their self-image (Price, 1993; Rice, 1981) and secondly, that of the radiographers experiencing the procedure themselves. Dealing with the patient perspective, the protection of self-image was apparent in the discussion about masculinity and the self-regulated participation of males in this study. By adopting this stance the males were in effect 'taking the role' of the stereotypical, socially constructed male. This would also explain why many patients, who even though objectified and fearful, took the role of compliant, relaxed patient and preferred to remain quiet and submissive. For the radiographers in particular this would protect their self-image in the eyes of their peers. This type of internally initiated behaviour was part of what Goffman, (1959) termed 'impression management.'

The second way in which 'taking the role of the other' can be achieved is by the radiographers themselves having a scan; a practice that was overwhelmingly endorsed by the radiographers interviewed. This enhances understanding and was central to the typology of experiential learners.

Roles and Rituals

Patients appeared to accept the radiographers' roles without question and it is fair to say that, although not identified as such, they were regarded by many as 'secondary gatekeepers' in having access to the imaging technology and obtaining a result for the referring clinician. Radiographers did not believe that their 'power-base' had increased from a patients' perspective, and thus even though they recognised their 'clinical gaze' (Foucault, 1973) had been technologically enhanced, their professional image (Simon, 1999) had not.

The sequencing of their roles in the interaction between the technology and the patient demonstrated their versatility, since radiographers were everything the patient wanted them to be (Rad 3). The expectation to be scanned with little or no personal interaction was evident from the patient sample, where the opinion was that there was no time for social conversation. The encounter with the technology was however regarded as much more significant, perhaps because it was the equipment that would reveal the medical outcome, and it was therefore the technology that was subjected to social manipulation.

Rituals were an important component of the interaction. It was evident that there was a range of coping strategies (Chapman, 1983), such as gestures and body-movements (Charon, 2001) which radiographers employed in communicating, and all of these contributed towards the ritual of having an imaging procedure. There is no claim to understand these further, other than to note that these examples are symbolic, since any ritual is so, if it conveys meaning in its execution (Mead, 1934; Blumer, 1969).

Some evidence, particularly from the radiographers, points towards a type of deviant behaviour that is hidden by ritual practice. This was not always the situation and rituals are therefore considered to be more of an impact on the individuals' world rather than an activity to satisfy any underlying 'dark secret' (Goffman, 1959) of the imaging team. This is discussed further within Critical Dramaturgy.

Performing Patients

Objectification as outlined in the results was a multi-faceted phenomenon, within a context that has been identified as being a 'total institution,' for the duration of the scan. The coping strategies such as closing of eyes, counting, and singing can be considered to be analogous to the 'anticipatory survival' recognised by Goffman (1959). This would be another form of self-regulated participation and impression management. Further loss of self due to any of the sub-categories identified would only serve to exacerbate the situation resulting in a traumatic experience.

The central tenet of Symbolic Interactionism is that of common meaning between actors. The notion that roles and rituals of patients and radiographers can be performed for ulterior motives is considered in this final part of the analysis within the perspective of Critical Dramaturgy.

Critical Dramaturgy

Although references were made to the verbal and non-verbal rituals of radiographers it was felt that they were made with good intentions since the radiographers empathised with the patients and recognised the need for regular human contact. However, when considered from a dramaturgical aspect, it could also mean that these rituals were used to

camouflage vulnerability or poor self-image and lack of autonomy (as suggested by Goffman, 1959; Menzies, 1970; and Chapman, 1983). As mentioned earlier, the radiographers felt that, as professionals, they were yet to realise the position of *formal overt decision makers*, which would possibly account for some of the behavioural concepts of the tribal culture.

Stone in Brissett and Edgley (1975) spoke of the identification *of* the powerful uniform always taking place before the identification *with*. This was certainly true with respect to this study within the typology of non-persons. It is however, also relevant in the opposite respect, since by developing a taxonomy of patients, radiographers were also guilty of identifying the classification or component part (Culmer, 1995) before the patient as a person.

Space Analysis

Associating the radiology department with the terms 'front-stage' and 'back-stage' is an obvious link that is confirmed by the physical lay-out of the imaging department. However, it is not just the appearance that matters, rather, it is the behavioural characteristics that accompany the imaging procedure.

Clearly the front-stage display by the radiographers was very convincing to an inexperienced patient audience, where they were assured that the role of the radiographers was the expected one (Barnhart, 2000). The more critical and experienced audience of the radiographers as patients were not as impressed, since some had been part of the performance before and they knew the unfolding drama.

The back-stage scenario, is typically hidden from the audience, as it was in this case with access only by invitation (imaging request) to the front-stage (scan room). However, if the behaviour back-stage was observed then the 'language of backstage' (Goffman, 1959) and the dark secrets of the imaging team were revealed. Thus the laughing and the relaxing gestures of the staff were noted (Rad 6).

Examples of what Burke, (1950) called the 'rhetoric of medicine' were also evident with MRFEM7, amongst others, referring to the pageantry of the investigation by saying 'it's a wonderful diagnostic thing' (Line 48). To some extent the informal scale of illness (Rad 1) would also suggest that some patients might 'aspire towards' an MR scan, being grateful that the 'trappings of technology' were being employed in their quest for a medical outcome.

The radiological performance

Radiographers were preparing patients for examinations, which often included the wearing of the hospital gown, thus removing some self-image, before bringing them into a strange technological environment. Once in the front-stage, they introduced the patient to the technology as advocated by Bowman (1993), and with the explanation, which can be assumed to have been symbolic, since the vast majority claimed to have understood it, they effectively rehearsed the requirements for the performance (positions and breathing instructions). The isolation and objectification only occurred once the radiographer had retreated to the back-stage, leaving the patient alone to have the scan performed within a temporary 'total institution.' In the words of MRFEM1, 'they greet you, you get ready, you go into the room and they are gone' (lines 112-113). Regular communication to the front-stage was variable, varying from physical touch, to words of encouragement.

However, unlike other dramaturgical studies, the patient, although on front-stage, was not in control of the proceedings, whilst they had a part in the interaction with the radiographer and the scanner when necessary. The total control remained with the radiographer. This included the relaying of breathing instructions, operating the movements of the scanner, and giving a final count-down to the end of the performance. Radiographers are in this role, most appropriately, referred to as Ontological Choreographers (Cussins, 1996). However, in some departments most of the above tasks can be carried out by the technology itself, lending further credence to the Actor Network Theory (Prout, 1996). This additional 'role for the technology' did however create additional problems for patients who preferred not to communicate directly with the technology (CTMALE13(2A)).

The dramaturgical perspective was confirmed with a theatrical metaphor from (rad 5) who noted 'they [patients] don't know what goes on behind the scenes' (line 86). There is evidence when considered from this perspective, to suggest that the role of the patient is anything but passive. The acting back and forth referred to earlier, can be viewed as a form of deliberate enactments which were intended to focus the attention of the radiographer onto the patient. If patients knew they were being observed, then the closing of eyes or verbal expressions of discomfort could be seen as 'hints' of displeasure known by Goffman (1959) as 'response cries.' An example was given by MRMALE10(2) who wanted get out of the scanner and normally kept his eyes closed. He told me:

I looked for the radiographers this time since I could see them in the mirror...I think I might have done it for a reason actually...I was kind of hoping that she would get up, and then I thought if she gets up she will be coming to get me out
(lines 161-169)

In this study the emergency button may have negated the need for many response cries but interestingly it was rarely used. Response cries were absent in the radiographers' experiences probably due to the fact that they wished to retain their self-image in the presence of peers.

Once the scan had finished, the radiographer returned to the front-stage and typically congratulated the patient on a good performance (Rad 6). Finally, not having the autonomy to comment on the outcome (non-persons) they directed the patient to their next destination, usually the clinician. Like the theatrical performer, who is rarely given immediate feedback from their critics and must wait for their report in a similar manner to the patient awaiting the result of the scan, the outcome will affect their future. Not having the time to engage in any social interaction was a problem frequently mentioned by radiographers and patients alike, it does however mean that by only having superficial conversation and little autonomy the radiographers can still maintain their self-identity, power (Jones, 1994) and professional image (Simon, 1999). Thus an ulterior agenda may exist.

Role Distance

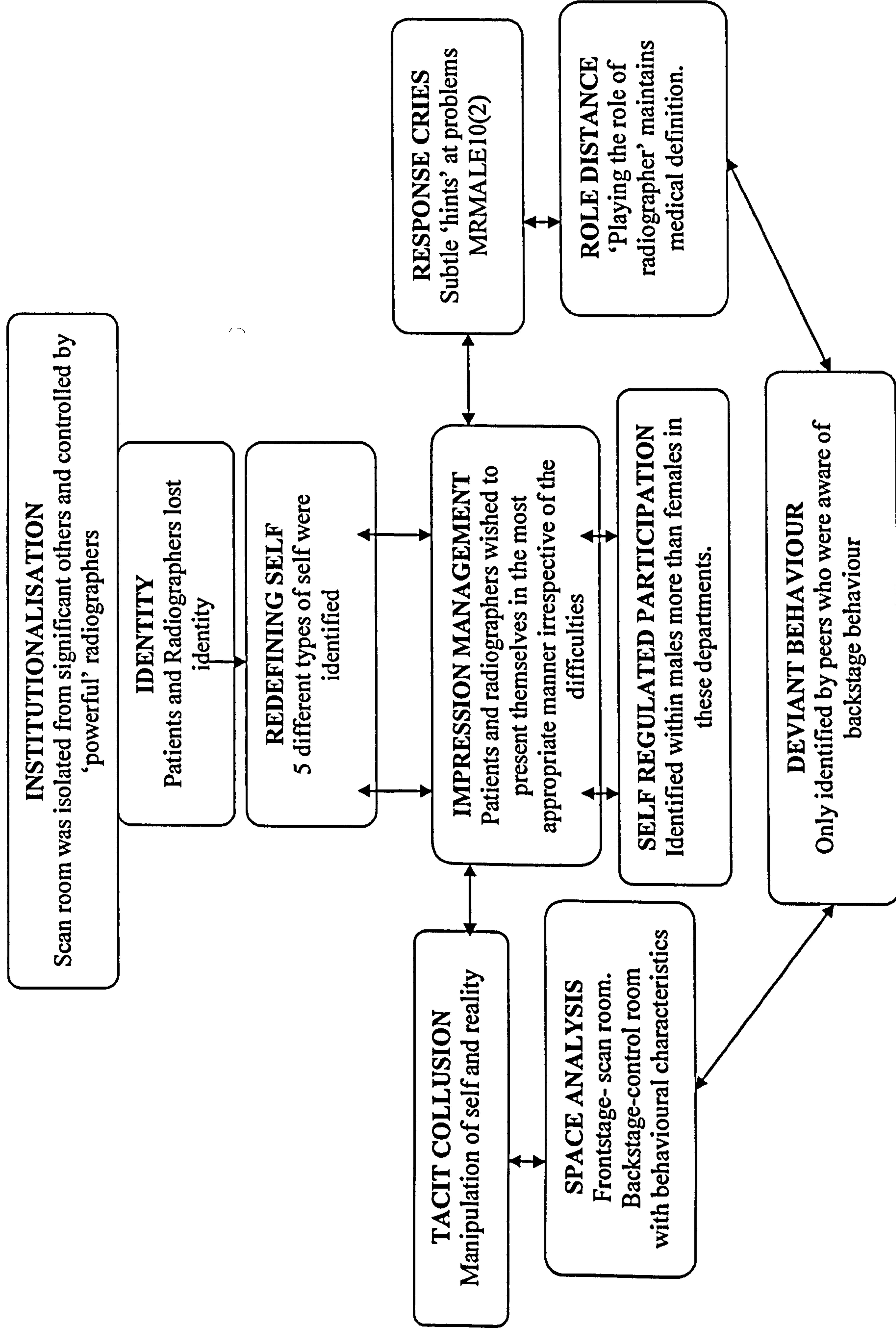
While many would be critical of the mere suggestion that any type of ulterior agenda exists in imaging professionals, especially when regarded so highly by patients, radiographers expressed concern and empathy for their patients, and were resistant to the idea of deviant behaviour as undermining professional integrity. However, as Goffman, (1959) recognised, if social reality is dramatically created, it will also be dramatically malleable. The deliberate 'acting out of a role' would then be for ulterior motives. Similarly, as stated in the literature, this strategy can also be used to exploit others

(Charon, 2001; Goffman, 1959). Being aware that the patients cannot see or hear the radiographers (Rad 1 and Rad 8), may, it is suggested, facilitate elements of unprofessional behaviour similar to those identified by Rad 6.

The dramaturgical concepts of Erving Goffman (1922-1982) were outlined in Figure 2.7 and examples from the data are now transposed into each category in Figure 7.11

Examples of Dramaturgical Concepts.

Figure 7.11 Examples of Dramaturgical Concepts



Section Four

Reflexive Analysis

Since the researcher was so close to the data and the interviewees he is required to critically examine his own involvement in the research study (Streubert and Carpenter, 1999). The researcher was a radiographer and educator with little previous clinical experience in these modalities and no prior experience of having either a CT or MR scan. In that respect it was possible to take more of an etic perspective but still be guided by the theoretical sensitivity of a diagnostic radiographer.

Reflection on the Research Process

By reflecting on the research process the investigator highlighted three factors that were dominant throughout the study.

Data Collection

The difficulties in gaining access to the patients and radiographers were unexpected and often frustrating for a novice researcher. The process of gaining ethical approval in particular proved to be a lengthy and complicated procedure. However, it made the researcher much more aware of the need to protect patients. This was most apparent when the interviewees insisted on focussing upon their medical conditions.

Interruptions in the interview process, especially during the radiographers data collection phase, resulted in a loss of continuity as did the background noise on some telephone interviews. Even the naturalistic environment of the MR departments with noisy air-conditioning units and ringing telephones made some transcripts difficult to interpret.

Asking probing questions and trying to understand the meaning of the answers was very reminiscent of solving the mystery, as noted by Wiseman (1974).

Having experienced these problems the researcher learnt to be more prepared for subsequent interviews. With substantial indigenous and sensitising concepts developing the researcher became more adept with the process over the period of the investigation.

Productive data only emerged after the initial interviews at which point the concepts began to formulate the typologies. Identifying the relevant data with respect to the alternative perspectives evolved later in the study, when the types and frequency of the phenomena reflected saturation at that particular point in time (Morse, 2000).

Sample selection

The researcher was aware that the use of self-selecting (extreme cases) (Patton, 1990) could be criticised for introducing biased accounts of the imaging procedure. It was felt that an advertisement for radiographers who experienced no difficulties may have not generated any responses. It is however recognised in retrospect that this was an assumption, but the accounts from radiographers who worked in these units and the constant recognition of extreme accounts within the study, assisted in maintaining a more balanced approach.

Data Analysis

The coding procedure was at times very tedious and mechanistic. The conversion of the data into codes, following lengthy periods of immersion with the transcripts, resembled a form of reductionism and tended to move away from the true patient perspective.

However, it was recognised that some element of reduction had to occur in the interpretation of the 'raw' transcripts. In addition, the more creative perspectives helped to elucidate the phenomena from an alternative stand point, providing enlightening and unique theory.

Personal Reflection

Throughout the interviews the researcher felt a genuine desire on behalf of all the interviewees to try to make a difference for the benefit of others. This gave further encouragement to the researcher, especially during periods when methodological obstacles were encountered. This concern for other patients was most obvious within the radiographer experience data. This group was reflecting on events that had occurred many years ago but had clearly left an impact on them. Critically, they were also radiographers trying to improve clinical practice: this was also the ultimate goal of the researcher.

Many radiographers are probably aware of the existence of local language and methods of communication as part of the socialisation (Moorhouse, 1992) into the culture of the department, but it is the manner in which these concepts are executed that is never really considered. As a health-care professional, the researcher chose not to accept, but rather to try to understand, just why radiographers perform their daily duties in such a manner. The lack of literature within the profession, coupled with conflicting opinions, made this task more difficult. However, following lengthy periods of total immersion in the data, concepts began to evolve.

This has taught the investigator about the importance of reflection in order to enhance the creativity of research, and proved that paradigms do indeed shape the interpretive imaginations of qualitative researchers (Morse, 1998).

Many of the typologies and concepts appear to match the personal experience of the researcher whenever he has been engaged in these imaging modalities. The radiographer culture, impression management, lack of identity, plus the empathy expressed for the patients, are all common attributes of radiographers encountered.

Equally, the patients' findings can now be readily identified by the researcher. The lay terms, the stories and the 'hints' at being distressed through 'response cries' (Goffman, 1959) are all evident, although the significance of them was not obvious before this study.

The range of coping strategies, the methods of communicating and the deviant behaviour of both patients and staff, were the most fascinating findings as far as the researcher was concerned.

Since the researcher was also an experienced radiographer, he was not surprised to find that many patients were very satisfied with the procedures and that they held the radiographers in high esteem. This was not necessarily reflected in the interviews of the radiographers themselves since, largely, they had a poor self image. The researcher feels that the profession needs to address this poor perception.

Some of the findings disturbed the investigator, but he also felt that they gave further justification for the research study. The depth of emotion associated with what may be

regarded as a straightforward imaging procedure, left a lasting impression on the researcher. This was especially the case with interview MRMALE10(2) for whom the MR scan will always be a terrifying memory. Having completed the study, it is now felt appropriate that the researcher should also experience the reality of an MR scan.

The problems experienced with the ethics committee, although a major setback at the time, served to strengthen the resolve of the researcher, and further emphasised the importance of rigour in the research process. The investigator learnt how to deal with committees that opposed his own ideas, and how important it is to be able to defend quality research. The whole experience altered the researcher's personal opinion of ethics to such an extent that he has now applied to be part of the local ethics committee.

Like most radiographers, the researcher came from a traditional scientific background, with a sparse research base within his own profession, so the decision to explore qualitative paradigms was a little daunting at first. The use of pictures, symbols and analogies in the research process evolved due to the inductive approach taken by the investigator. In addition, the intensive study of theory from other disciplines and health professions produced new and refreshing methods for analysing society and ultimately led to the genesis of a truly *bricoleur* researcher.

The skills gained have enabled the researcher to develop understanding in other areas, such as the questioning of students and staff about their roles and rituals. Lectures given by the researcher that previously focused on the technological aspect of radiological equipment, now include some recognition of the social reality and the humanistic elements involved. It is hoped that the education of student radiographers will therefore,

from the researcher's perspective, become more holistic, more complete and above all else provide a better representation of reality. In addition, observations within the clinical areas have taken on new meaning, where the otherwise mundane action or comment is now analysed for its true meaning.

The study of dramaturgy has taught the researcher to question the possible ulterior motives of health care professionals. This is not in any cynical or deviant manner, but rather to gain a greater understanding of the social construction of the radiology department.

Initial dissemination of the research findings at a medical sociology conference was met with great enthusiasm by nursing colleagues, where the desire to carry out a similar analysis of behaviour was apparent. However, the researcher took no pleasure in labelling radiographers as 'non-persons,' nor in highlighting the many failings within our professional behaviour. Nevertheless, the researcher is keen for the difficult questions to be addressed. For this reason, further dissemination and, indeed, further research in this important area of work, will be undertaken with the specific remit of focusing on the implications for practice and the potential for future research outlined within the summary of results.

The researcher feels that it is critical that clinical radiographers, not just academic radiographers, are made aware of the research findings. It is not known at this stage how radiographers would receive such findings, but it must be remembered that the data has come from their peers and patients, and gives all radiographers the opportunity to reflect on their own practice.

The writing of the thesis has in itself been a life-changing experience. The discipline associated with the transcribing and analysing of texts was extremely challenging. However, the exciting findings revealed more than just the opinions of the interviewees. They also demonstrated the transition from a novice researcher into an expert researcher in this particular field. The quest for life-long learning and the enhancement of quality research in this discipline, has therefore only just begun.

Recommendations

Although many different recommendations were discussed during the study, the following four were seen as the most essential.

- More human contact and communication to avoid what can be technologically deterministic procedures.
- Pictorial representation of the scanner since all patient information is subject to social manipulation. (Acquire positive symbolic significance)
- Radiographers should identify themselves and their professional status.
- Radiographers should experience high-technology imaging procedures and benefit from experiential learning.

CHAPTER 8

CONCLUSION

It was stated in the methodology that the aims of the study were as follows:

1. *To develop a conceptual model of the human interactions with medical imaging technology.*

The model (figure 7.3) demonstrated the interrelationships between the derived typologies which are critical components within the interaction. Since it is not the frequency of the findings that matters, rather, it is the existence of the phenomena (Murphy et al, 1998), the need for further research in this field to assess the relevance of the model in other radiological fields is considered to be of paramount importance. Testing of the derived typologies would be a useful starting point in studying the interactions in Angiography, Cardiology and Radiotherapy. These modalities in particular, as the data showed, would be areas of primary interest.

2. *To generate a unique theory of the modern radiological encounter.*

Analysing communication and meaning in the imaging department from within alternative social scientific frameworks can only assist in professional understanding leading towards greater autonomy. Since there is no one 'true reality' it is essential that radiographers view the imaging experience from as many different paradigms as possible.

For the radiography profession this analysis has uncovered unique theory about patients' interactions with imaging technology and radiographers. The strictly deterministic imaging technology was tempered by the humanistic qualities of 'untitled' imaging professionals.

The dramaturgical analysis enabled the researcher to present the imaging encounter in a unique manner, where the ideas of 'front-stage,' 'back-stage,' and impression management were particularly relevant.

The notion that radiographers were 'playing out' an act or drama, may appear to be an assault upon the very definition of professionalism. Critics of this perspective have claimed it is a distortion of social reality (Young, 2001). However, such micro-sociological analysis of interactions helped to *Ausdrucken* (squeeze-out) unique understanding and it is only by considering the profession with the use of alternative perspectives that novel insights can produce vitality and wisdom (Massey, 1990).

To have taken a structural perspective may have been more appropriate to the needs of policy-makers and equipment manufactures as was noted in Orilowski's models (1992) but it would miss the very essence of the otherwise mundane social rituals. By considering alternative views a more *bricoleur*⁵ approach to research can be fostered. Only by listening to the patients' version of the procedure can policy-makers acquire any 'true presence' (Bernardo, 1998).

⁵ Bricoleur –Using multiple methodologies within overlapping perspectives and paradigms to understand the world. (Denzin and Lincoln, 1998 p.3).

It was hoped that the study gave the patients the opportunity to express their feelings and opinions. The degree of empathy for others was most apparent, together with their hopes that their own experiences would benefit future patients.

As medical imaging equipment continues to evolve, in a rapidly changing technological world, radiographers must be increasingly aware of the social phenomena, as well as the scientific facts that surround these radiological procedures. It is only by appreciating these, and identifying 'roles' and 'self' within the interaction, that the profession can hope to bridge the 'gap' that is the humanistic-technological dichotomy.

References

- Abbott, P and Sapsford, R (1998): *Research Methods for Nurses and the Caring Professions*. (2nd Ed). Open University Press, Buckingham.
- Anonymous (2000): *Qualitative Methods in Health Research* (online). <http://www.curtin.edu.au/learn/unit/qmhr582>. (Accessed 26/09/2000)
- Adams, GA. (1986): Computer technology: its impact on nursing practice. *Nursing Administration Quarterly* 10(2), 21-33.
- Allen, S (2002): Personal Correspondence. Health and Social Sciences, University of Bournemouth
- Ashworth, P. (1987): Technology and machines-bad masters but good servants. *Intensive Care Nursing* 3, 1-2.
- Attinger, EO (1984): Technological revolution on health care. *IEEE transactions on biomedical engineering*. BME 31, 736-743.
- Baird, M (1996): Postpositivist methodology and clinical education. *Radiologic Technology* 67 (1) p.15-23.
- Balsamo, A.(1997): *Technologies of the Gendered Body: Reading Cyborgs Women*. Duke University Press, Durham, NC.
- Barley, SR (1986): Technology as an occasion for structuring: Evidence from observations of CT scanners and the social order of radiology departments. *Administrative Science Quarterly*, 31, 78-108.
- Barley, SR (1990): The Alignment of technology and structure through roles and networks. *Administrative Science Quarterly*, 35, 61-103.
- Barrett M. (1987): The concept of 'difference.' *Feminist Review* 26, 29-41.
- Barnard A. (1996): Technology and nursing: an anatomy of definition. *International Journal of Nursing Studies* 33, 433-441.
- Barnard, A (1997): A critical review of the belief that technology is a neutral object and nurses are its masters. *Journal of Advanced Nursing* 26(1), 126-131.
- Barnard, A (1999): Nursing and the primacy of technological progress. *International Journal of Nursing Studies* 36, 435-442.
- Barnard, A (2000): Alteration to will as an experience of technology and nursing. *Journal of Advanced Nursing*, 31(5), 1136-1144.

- Barnard, A; Gerber, R (1999): Understanding technology in contemporary surgical nursing: a phenomenological examination. *Nursing Inquiry* 6, 157-170.
- Barnard, A; Sandelowski, M (2001): Technology and nursing care: (Ir)reconcilable or invented difference? *Journal of Advanced Nursing* 34(3), 367-375.
- Barnhart, A (2000): *Erving Goffman: The presentation of self in everyday life*. <http://www.hewett.norfolk.sch.uk/curric/soc/goffman.htm>, 1-11. (Accessed 06/09/2000).
- Barton, A (2000): Men's health: a cause for concern. *Nursing Standard* 15(10), 47-52.
- Becker, H S ; Mc Call, M M (1990): *Symbolic Interaction and Cultural Studies*. University of Chicago Press, London.
- Begley, C (1996): Using triangulation in nursing research. *Journal of Advanced Nursing* 24, 122-128.
- Becker, H.S; Geer, B; Hughes, E.C; Strauss, A.L (1961): *Boys in White*. University of Chicago Press, Chicago.
- Bender, D; Harbour, C; Thorp, J; Morris, P (2001): Using pictures in research *Qualitative Health Research Conference* 11(Nov), 780-794.
- Benfield, DG (1979): Two philosophies of caring. *Ohio State Journal* (August 1979), 508-511.
- Bennet, G (1979): *Patients and their Doctors*. Bailliere Tindall, London.
- Benton, D; Avery, G (1993): Quality Research and Ritual in Nursing. *Nursing Standard* Aug 25 7 (49).
- Berger, P.L (1963): *Invitation to Sociology*. Garden City.
- Berger, P (1969): *The Social Construction of Reality*. Anchor, New York.
- Bernardo, A (1998): Technology and true presence in nursing. *Holist Nurs Pract* 12(4), 40-49.
- Benzies, KM; Allen, MN (2001): Symbolic interactionism as a theoretical perspective for multiple method research. *Journal of Advanced Nursing*, 33(4), 541-547.
- Beynon, A (2001): *Dilemmas in Diagnosing Soft Markers*. Unpublished Masters Thesis, University of Wales, Bangor.
- Bieze, J (1995): Proving the value of medical imaging. *D.I.E.M*, 48-57.

- Bijker, WE (1987): The social construction of bakelite : Towards a theory of invention. In: The Duality of Technology, Orlikowski, W. (1992) *Organisational Science* 3 (3), 398-427.
- Blumer, H (1962): Society as Symbolic Interaction. In: Rose A.M (Ed) *Human Behaviour and Social Processes* p.179-192. Houghton Mifflin, Boston.
- Blumer, H (1969): *Symbolic Interactionism: Perspective and Method.* University of California Press Ltd. London.
- Blumer, M (1982): *Social Research Ethics.* Mac Millan, London.
- Board of the Faculty of Clinical Radiology; The Royal College of Radiologists (1999): *Guide to Information Technology in Radiology: Teleradiography and PACS.* February 1999.
<http://www.rcrad.org.uk/radiology/publications/telerad.html>.
 (accessed 10th Dec 1999)
- Bourdieu, P (1977): *Outline of a theory of practice.* Cambridge University Press, Cambridge.
- Bowman S. (1993): The radiographer/patient relationship- a short term but vital interaction. *Radiography Today* 59(675), 17-18.
- Brennan, SC; Redd, WH; Jacobsen, PB; Schorr, O; Heelan, RT; Sze, G K; Krol, G; Peters, BE; Morrissey, J K (1988): Anxiety and panic during MRI scans. *Lancet* 2 (8609), 512.
- Brink, P (1991): Issues of reliability and validity. In: Morse J (Ed) *Qualitative nursing research: a contemporary dialogue.* Sage, London p.164-186.
- Brinkman D. (1971) Technology as philosophic problem. *Philosophy Today* 15(2), 122-128.
- Brissett, D and Edgley, C (Eds) (1975): *Life as theatre: A dramaturgical sourcebook.* Aldine Publishing Company, Chicago.
- Brunt, H J. (1985): An exploration of the relationship between nurses empathy and technology. *Nurse Administration Quarterly* 9(4), 69-78.
- Bryner, J; Stribley, K (Eds.) (1978): *Social Research: Principles and Procedures.* Open University Press, London.
- Buber, M (1958): *I and Thou* (2nd Ed) Scribners, New York.
- Burbles, N C; Rice S.(1991): Dialogue across differences: continuing the conversation. *Harvard Educational Review* 61, 393-416.
- Burgess, R (1984): *In the Field.* Routledge : London.

- Burke, K (1937, 1945, 1950): A grammar of motives. In: *Life as theatre: A dramaturgical sourcebook*. Aldine Publishing Company, Chicago.
- Burnard, P (1991): A method of analysing interview transcripts in qualitative research. *Nurse Education Today* 11, 461-466.
- Burns, N; Grove, S K (1995): *The practice of nursing research*. WB Saunders Co, Philadelphia.
- Burton, J (1989): The Need for More Patient Counselling. *Radiography Today* 55, 28-29.
- Bush, C G (1998): Women and the assessment of technology: to think to be; to unthink, to free In: Sandelowski, M (2000) *Devices and Desires: Gender Technology and American Nursing*. The University of North Carolina Press.
- Cahill, S (1986): Language practices and self definition: the case of gender identity acquisition. *The Sociological Quarterly* 27(3), 295-311.
- Cannon, R; Barley, V L (1999): The Final Countdown. *Synergy* (December 1999), 4-5.
- Caralee, E; Caplan, M D; John Hoey, M D (1999): Impact of new technologies in medicine: progress and pitfalls. *Canadian Medical Association Journal* (online) 160(1), p.66.
<http://www.cma.ca/cmaj/vol160/issue1/0066.htm> (Accessed 15 Dec 1999)
- Carnevali D L. (1985): Nursing perspectives in health care technology. *Nursing Administration Quarterly* 9, 10-18.
- Carney, H; Joiner, J; Tragou, H (1997): Categorizing, coding, and manipulating qualitative data using the WordPerfect word processor. *The Qualitative Report* 3(1, March), 1-6.
- Carroll, A (2001): Rhythms of Lodestone. *Lodestone Patient Care Limited*. (Correspondence)
- Casper, M J. (1994): At the margins of humanity. Foetal positions in science and medicine. *Science, Technology and Human Values* 19, 307-323.
- Casselden, P (1988): Aspects of personality and patients in communication and counselling oncology patients: are diagnostic radiographers adequately supported in this role? *Radiography* 4, 173-182.
- Castle, A (1988): Concepts of health in diagnostic radiography. *Radiography* January/February 54(613), 25-27.
- Castle, A (2000): Radiography: Nature of knowledge and academic tribe. *Radiography* 6 (4, November), 261-268.

- Cesar, L C (1997): Computed Radiography its impact on radiographers. *Radiologic Technology* 68(3), 225-231.
- Channell, D F(1991): *The Vital Machine: A study of Technology and Organic Life*. Oxford University Press, New York.
- Chapman, G E (1983): Ritual and rational action in hospitals. *Journal of Advanced Nursing* 8, 13-20.
- Charon, J (2001): *Symbolic Interactionism: An Introduction, an Interpretation, an Integration*. Seventh ed. Prentice Hall, New Jersey.
- Chenail, R (1995): Presenting Qualitative Data. *The Qualitative Report* 2(3, December), 1-6.
- Clarke, A (1999): Qualitative Research: Data Analysis Techniques. *Professional Nurse* 14(8, May), 531-533.
- Clarke, A (Ed.) (2001): *The Sociology of Healthcare*. Prentice Hall, London.
- Clarke N. (1968): Automation as it affects the general nurse and her patients. *The Australian Nurses Journal* 5, 104-106.
- Cockburn, C (1985): Technology and caring: New developments in medical x-ray. In: *Machinery of Dominance: Women, Men and Technical Know-How*. London Press, London. 113-141.
- College of Radiographers (1997): *Reporting by Radiographers: A Vision Paper*. London.
- Cooley, C (1970): *Social Theory: The Multicultural and Classic Readings*. Westview Press, Boulder.
- Cooley, M. (1980): Computerization: Taylor's latest Disguise. *Economic and Industrial Democracy*, 1, 523-539.
- Cooper, C (1993): The intersection of technology and care in the ICU. *Adv Nurs Sci* 15(3), 23-32.
- Corbin, JM (2003) The body in health and illness. *Qualitative Health Research* 13(2) Feb, 256-267.
- Cormack A. (1982): Computed Tomography: some history and recent developments. In: Kevles B H.(1997): *Naked to the Bone*. Addison-Wesley, Massachusetts.
- Cotgrove, S. (1982): *Catastrophe or Cornucopia: The Environment, Politics and the Future*. John Wiley, New York.

- Crotty, M. (1996): *Phenomenology and Nursing Research*. Churchill Livingstone, Australia.
- Culmer, PJ (1995): *Chesney's Care of the patient in Diagnostic Radiography*. 7 th ed. Blackwell Science, London.
- Curtin, L (1984): Nursing: High touch in a high tech world. *Nursing Management* 15, 7-8.
- Cussins, C (1996): Ontological choreography: agency through objectification in infertility clinics. *Social Studies of Science* 26, 575-610.
- Dantendorfer, K; Amering, M; Bankier, A; Helbeich, T; Prayer, D; Youssefzadeh, S; Alexandrowicz, R; Imhog, H; Katschinig, H (1997): A study of the effects of patient anxiety, perceptions and equipment on motion artefacts in Magnetic Resonance Imaging. *Magnetic Resonance Imaging* 13(3), 301-306.
- Darling, J (1976): *Bachelorhood and late marriage: An interactionist interpretation*. PhD thesis, University of Connecticut.
- Davies, C (1995): *Gender and the Professional Predicament in Nursing*. Open University Press, Buckingham.
- Davies, D; Dodd, J (2002): Pearls, pith, and provocation: Qualitative research and the question of rigor. *Qualitative Health Research* 12(2, February), 279-289.
- Davis, F (1959): The Cabdriver and his Fare: Facets of a Fleeting Relationship. *American Journal of Sociology* 65 (Sept) p. 158-165.
- De Cann, R (1988): Therapeutic soothing: an approach to patient care in radiography. *Psychology in Radiography II*. Change Publications, London 10-20.
- Delamont, S (1992): *Fieldwork in Educational Settings: Methods, Pitfalls and Perspectives*. Falmer, London.
- Denscombe, M (1998): *The Good Research Guide: For Small-Scale Social Research Projects*. Open University Press, Buckingham.
- Denzin, K (1989): Interpretive Interactionism. *Applied Social Research Methods Series* 16. Sage.CA.

- Denzin, N; Lincoln, Y (1994): *Entering the Field of Qualitative Research*. In: Denzin, NK; Lincoln, YS (Eds) (1998) *Handbook of Qualitative Research*. Thousand Oaks, Sage, CA.
- Denzin, NK and Lincoln, YS (Eds) (1998): *Strategies of Qualitative Inquiry*. Sage Publications. London.
- Department of Health (1998): *A first class service: Quality in the new NHS*. HMSO. London
- De Wilde, J; Curran, J; Price, D; Williams, J; Kitney, R (2001): Evaluation summary of Toshiba Excelart 1.5 T MRI system. *Diagnostic Imaging Review* 15, 12-13.
- Diamond, J (1998): *C: Because Cowards Get Cancer Too*. Vermilon, London.
- Dingwall, R; Murray, T (1983): Categorization in accident departments: "good" patients, "bad" patients and children. *Sociology of Health and Illness* 5, 127-148.
- Dowd, SB (1991): Using touch to enable patient care in radiography. *The Canadian Journal of Medical Radiation Technology*, 22(3), 121-124.
- Dowd, SB (1992): Using Qualitative research in radiological technology. *Radiologic Technology* 63(3), 178-182.
- Dumit, J (1995): Brain-mind and American technological dream marketing: Toward an ethnography of cyborg envy In: *Images and Image: Technology and Social Politics of Revealing Disorder in a North American Hospital*. *Medical Anthropology Quarterly* 13, 141-162.
- Dwane, J (1988): Initial patient contact in diagnostic radiography. In *Communication and counselling oncology patients: are diagnostic radiographers adequately supported in this role?* *Radiography* 4, 173-182.
- Dwane, J (1993): Initial patient contact in diagnostic radiography. *Radiography Today* 59(668), 17-18.
- Easton, K; Mc Comish, J; Greenberg, R (2000): Avoiding common pitfalls in qualitative data collection and transcription. *Qualitative Health Research* 10(5, September), 703-707.
- Edwards, R (1979): *Contested Terrain: The Transformation of the Workplace in the Twentieth Century*. Basic Books, New York.
- Ellul J, (1964): *The Technological Society*. Alfred A Knopf, New York.
- Ellul J, (1968): *Critique of the New Common Places*. Alfred A Knopf, New York.

Emerson, J (1979): Behavior in private places: sustaining definitions of reality in gynecological examinations. *Recent Sociology* 2, 74-97.

Emrick, K (1999): How do you think the public perceives radiology, and what can be done to raise and/or improve its image? *Diagnostic Imaging* (online) newsgroup. www.dimag.com/db_area/messages5.htm. (Accessed 15/12/01)

Engineering, Physics and Medicine (1997): *Recommended Standards for the routine performance testing of diagnostic x-ray imaging systems*. IPEM Report no 77, 60.

Evens, R (1995): Rontgen Retrospective: One hundred years of a revolutionary technology. *JAMA* 274(11), 912-916.

Field, P.A; Morse, JM (1985): *Nursing Research: The Application of Qualitative Approaches*. Rockville, Aspen.

Fine, GA (1993): The sad demise, mysterious disappearance and glorious triumph of symbolic interactionism. *Annual Review of Sociology* 19, 61-87.

Firth, B (1991): Giving Information to radiotherapy patients. *Nursing Standard* 5(34, 15 May), 33-35.

Flaherty, JA; Hoskinson, K (1989): Emotional distress during MRI. *New England Journal of Medicine* 320(7), 467-468.

Foucault, M (1973): *Birth of the Clinic*. Tavistock Publications, Kent.

Foucault, M (1998): *Technologies of self*. University of Massachusetts Press p.145-162.

Frankenberg, R (1986): Sickness as cultural performance: drama, trajectory, and pilgrimage root metaphors and the making social of disease. *International Journal of Health Services* 16(4), 603-626.

Freeman, C (1987): The case for technological determinism. In: Finnegan R, Salaman G, Thompson K (Eds), *Information technology: Social issues*. London.

Freenberg, A (1999): *Questioning Technology*. Routledge. New York.

Gamarnikow, E (1978): Sexual Division of Labour: The Case of Nursing. In: Kuhn, A; Wolfe, A (Eds) *Feminism and Materialism*. Routledge, London.

Gaudinski, M (1979): Coping with expanding nursing practice, knowledge, and technology. *Aviation, Space and Environmental Medicine* 10, 1073-1075.

Gibbs, A (1997): A study of the communication factor of patient care between diagnostic radiographers and patients. *Research in Radiography* 4, 18-27.

- Giddens, A (1984): *The Construction of Society: Outline of the Theory of Structure*. University of California Press, Berkeley.
- Giorgi, A (1993, 1998): *Phenomenological Psychology*. Thousand Oaks. Sage, Calif.
- Glaser, B; Strauss, A (1965): *Awareness of Dying*. Aldine, Chicago.
- Glaser, B; Strauss, A (1967): *The Discovery of Grounded Theory*. Aldine, Chicago.
- Glaser in: Mould (1933): Invited review: Rontgen and the discovery of x-rays. *British Journal of Radiology* 68, 1145-1176.
- Goffman, E (1959): *The Presentation of self in Everyday Life*. Penguin Books, London.
- Goffman, E (1961): *Asylums: Essays on the Social Situation of Mental Patients and Other Inmates*. Anchor Books, Doubleday, New York.
- Goffman, E (1963): *Behaviour in Public Places: Notes on the Social Organisation of Gatherings*. Free Press. New York.
- Goffman, E (1967): *On the face work*. Doubleday, New York
- Goffman, E (Ed.) (1969): *Strategic Interaction*. University of Pennsylvania Press.
- Goffman, E (1971): *Relations in Public: Micro-studies of the public order*. Basic Books.
- Gordon, L (1991): On difference. *Gender* 10, 91-111.
- Gordon, S (1992): The importance of being nurses. *Technology Review* 95 (7), 42-51.
- Gray, D (1999): Reducing Anxiety for MRI patients. *Synergy* (December), 15-17.
- Greaves, J (1996): The gender trap. *Health Informatics* 2, 194-198.
- Greaves, P J (1998): *Nurses knowledge of patient information security in health care information systems: A cause for concern*. In: Richards, B (2000) *Current Perspectives in Health Care Computing: conference proceedings* pp77-84 Surrey, England.
- Greenhalgh, T and Taylor, R (1997): How to read a paper: Papers that go beyond numbers (qualitative research). *British Medical Journal* 315, 740-743.

- Grbich, C (1999): *Qualitative Research in Health: An Introduction*. Sage Publications, London.
- Guba E; Lincoln Y (1989): *Fourth Generation Evaluation*. Sage, California.
- Guba, EG; Lincoln, YS (1994): *Competing Paradigms in Qualitative Research*. In: Denzin, NK; Lincoln, YS (Eds) *Handbook of Qualitative Research*. Thousand Oaks, Sage, CA.
- Hafslund, B (2000): Mammography and the experience of pain and anxiety. *Radiography* 6 (4, November), 269-272.
- Hall, J; Stevens, P (1991): Rigour in feminist research. *Advances in Nursing Science* 13(3) 16-29.
- Halm MA, Alpen MA (1993): The impact of technology on patients and families. *Nursing clinics of North America* 28, 443-457.
- Hammersley, M (1989): *The Dilemma of Qualitative method*. Routledge, London.
- Hammersley, M (1990): What's wrong with ethnography? The myth of theoretical description. *Sociology* 24, 597-615.
- Hammersley, M (1992): *What's Wrong with Ethnography?* Routledge, London.
- Hammersley, M; Atkinson, P (1995): *Ethnography: Principles in Practice*. (2 nd Ed) Routledge, London.
- Hanna, B (1997): From Raw Data to Chapters via the Support of NUD.IST. *Health Informatics* 3, 61-65.
- Haraway, D J (1991): *Simians, Cyborgs and Women. The Reinvention of Nature*. Routledge, New York.
- Harding S (1980): *Value Laden Technologies and the Politics of Nursing*. In: *Nursing: Images and Ideals*. Springer, New York.
- Hapercollins, (1995): *Concise Dictionary and Thesaurus*. Harpercollins Publishers, England.
- Harris,C (1981): Erving Goffman. *The Times Literary Supplement* 18th December.
- Harris, R (2000): Find and deliver: Research and Practice in Therapeutic Radiography. *Radiography* 6(4, November), 225-226.
- Hawthorne, D L ; Yurkovich, N J (1995): Science, technology, caring and professions: are they compatible? *Journal of Advanced Nursing* 21, 1087-1091.

Heidegger, M (1977): *The Question Concerning Technology and Other Essays*. Garland, New York.

Hendee, WR (1992): Teleradiology: The maturation of a Technology. *Applied Radiology* (July 1992), 13-15.

Henderson, G (1985): On being a patient. *Radiography* 51(600), 321-323.

Henwood, S M and Benwell, M J (1998): Continuing professional development for radiographers: a review of the literature. *Journal of Diagnostic Radiography and Imaging* 1(1), 17-25.

Hickson, D; Pugh, D S; Pheysey, D (1969): Operations technology and organisational structure: an empirical reappraisal. *Administrative Science Quartely*, 14, 378-397.

Hobbs, A (1995): Shattering the myths of masculinity In: Men's health: A cause for concern. *Nursing Standard* 15(10, 22 Nov), 48.

Hogg, P and Bishop, M (2000): A computer based information system for abdominal patients: preliminary findings *Radiography* 3, 35-39.

Holmes, CA (1992): The Drama of Nursing. *Journal of Advanced Nursing* 17, 941-950.

Huether, SE (1978): Biomedical instrumentation and the nurse practitioner. *Nursing Clinics of North America* 13 (4), 561-571.

Hughes, D (1988): When nurse knows best: Some aspects of nurse/doctor interaction in a casualty department. *Sociology of Health and Illness*, 10, 1-21.

Hughes, N J (1994): *Patients Tolerance of Magnetic Resonance Imaging*. Unpublished MA Thesis, University of Keele.

Hunter, A; Lusardi, P; Zucker, D; Jacelon, C; Chandler, G (2002): Pearls, pith, and provocation: Making meaning: The creative component in qualitative research. *Qualitative Health Research* 12(3, March), 388-398.

Ihde D. (1990) *Technology and the Lifeworld: From Garden to Earth*. Indiana University Press, Bloomington.

Ihde D. (1991): *Instrumental Realism*. Indiana University Press, Bloomington.

Illich, I (1976): *Limits to Medicine*. Penguin Books, Harmondsworth.

Innes, J (1998): A qualitative insight into the experiences of postgraduate radiography students: causes of stress and methods of coping. *Radiography* 4(2, May), 89-100.

- James, V; Gabe, J (1996): *Health and the Sociology of Emotions*. Blackwell Publishers, Oxford.
- Janesick, V J (1990): In: Denzin, N; Lincoln, Y.(1998) *Strategies of Qualitative Inquiry*. Sage, Thousand Oaks, California.
- Jacob, E (1988): Clarifying qualitative research: A focus on traditions. *Educational Research* 17, 16-24.
- Jeffrey, R (1979): Normal rubbish: deviant patients in casualty departments. *Sociology of Health and Illness* 1, 90-107.
- Jenson, GM (1988): The work of accreditation on site evaluators: enhancing the development of a profession. *Physical Therapy* 68, 1517-1525.
- Jones, C; Alexander, J.(1993): The technology of caring: A synthesis of technology and caring for nursing administration. *Nurs Adm Q.*17, 11-20.
- Jones, L (1994): *The Social Context of Health and Health Work*. Palgrave, Hampshire.
- Jorgensen, DL (1989): *Participant observation a methodology for human studies*. Sage Publications, CA.
- Katz, RC; Wilson, L; Frazer, N (1994): Anxiety and its determinants in patients undergoing Magnetic Resonance Imaging. *Journal of Behavioural Therapy Exp Psychiatrics.* 25, 131-134.
- Keedy, J (1999): *The dynamics of dementia: A modified Grounded Theory study*. Unpublished Doctor of Philosophy Thesis, University of Wales, Bangor.
- Kevles, BH (1997): *Naked to the bone: Medical Imaging in the Twentieth Century*. Rutgers University Press, New York. p.261-4
- Kirk, J; Miller, M (1986): *Reliability and Validity in Qualitative Research*. Sage, London.
- Kleynhans, A; Cahill, D (1991): Paradigms for chiropractic research. *Chiropratic Journal of Australia.* 21(3), p.102-107.
- Kling J, (1987) Value Conflicts and Social Choice in Electronic Payment systems. In: Finnegan R, Salamon G, Thompson K, (Eds) *Information Technology*. Social Issues, London.
- Koch, T (1994): Establishing rigour in qualitative research: The decision trail. *Journal of Advanced Nursing* 19, 976-986.

- Koechling, U; Spevack, MG; Gerstein, S; Del Vasco, R; Del Carpio, R (1996): Panic attacks while undergoing the Magnetic Resonance imaging scan. American Public Communications (online).
www.apa.org/releases/mri.html (Accessed 17/09/00)
- Kuckartz, U (Ed.) (2001): *Max. Qualitative data Analysis Introduction*. VERBI Software, Berlin.
- Kuhn, M (1964): Major trends in symbolic interaction over the past twenty-five years. *Sociology Quarterly* 5, 61-84.
- Laing RD. (1959): *The Dividend Self*. Penguin, Harmondsworth.
- Laing G. (1982): The impact of technology. *Medical Instrumentation* 16(5) September-October, 241-242.
- La Masurier, S (1997): *A Holistic Picture of the Barium Enema Examination*. Unpublished PhD thesis. University of Wales, Bangor.
- Lee, V (1998): *Beyond Behaviourism*. Erlbaum, New Jersey.
- Leight, S (2002): Starry night: using story to inform aesthetic knowing in women's health nursing. *Journal of Advanced Nursing*, 37(1), 108-114.
- Lerner, B H (1992): The perils of x-ray vision: how radiographic images have historically influenced perception. *Perspectives in Biology and Medicine* 35(3), 382-397.
- Lewis, C. (2002): Interviews as data: The problems of talking with real people. *Qualitative Research in Health and Social Care*. Abstract p. 56.
- Lewis, S (1998): Some research possibilities in diagnostic radiography. *Radiography* 4(3), 205-209.
- Lincoln, YS; Guba, E (1985): *Naturalistic Inquiry*. Sage, CA.
- Lloyd, T (1998): Inequalities in health: Men's health forum briefing paper. In: Men's health: A cause for concern. *Nursing Standard* 15(10, 22 Nov), 48.
- Locsin, RC (1998): Technological competence as caring in critical care nursing. *Holist Nurs Pract* 12(4), 50-56.
- Locsin, RC (Ed.) (2001): *Advancing Technology, Caring, and Nursing* Westport, Connecticut.
- Lofland, J (1971): In: *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis*. Belmont, CA.
- Lofland, J; Lofland, LH (1984): *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis*. Belmont, CA.

- Long, T; Johnson, M (2000): Rigour, reliability and validity in qualitative research. *Clinical Effectiveness in Nursing*. 4, 30-37.
- Luck, M; Bamford, M; Williamson, P (2000): *Men's health: Perspectives, diversity and paradox*. Blackwell Science Limited, London.
- Lupton, D (1994): *Medicine as Culture: Illness, Disease and the Body in Western Societies*. Sage Publications. London.
- Lupton, D (1996): In *Health and the sociology of emotions*. Blackwell publishers Limited, Oxford. pp157-167.
- Mac Kenzie, R; Sims, C; Owens, R G; Dixon, A K (1995): Patients perception of Magnetic Resonance Imaging. *Clinical Radiology* 50(3), 137-143.
- Mander J. (1978): *Four Arguments for the Elimination of Television*. William Morrow and Company, New York.
- Marck, P (2000): Nursing in a technological world: searching for healing communities. *Adv Nurs Sci* 23(2), 62-81.
- Marshall, C; Roseman, G (1989): *Designing Qualitative Research*. Sage, CA.
- Marsland, L (1998): Comparing and contrasting unstructured interviews with newly qualified nurses and senior health service personnel. *NTrresearch* 3, 456-463.
- Massey, G (1990): *The Drama of Social Life: Essays in Critical Dramaturgy*. Dramaturgical Society (on line)
www.tryoung.com/dramasociallife/004dramaturgicalsociety.html.
 (Accessed 12/02/01)
- Mathers S A, Mc Kenzie G A, Chesson R A.(1999): *Patient knowledge of three scanning techniques (unpublished)* Aberdeen Grampian University and the Robert Gordon University.
- May C, Fleming C, (1997): The professional imagination: narrative and the symbolic boundaries between medicine and nursing. *Journal of Advanced Nursing* 25, 1094-1100.
- May, C; Gask, L; Atkinson, T; Ellis, N; Mair, F; Esmail, A (2001): Resisting and promoting new technologies in clinical practice: The case of telepsychiatry *Social Science and Medicine* 52, 1889-1901.
- Mc Connell, A (1990): The impact of machines on the work of critical care nurses. *Crit Care Nurs Q* 12(4), 45-52.

- Mc Connell, E A. (1991): Key issues in device use in nursing practice. *Nursing Management* 22(11), 32-33.
- Mc Connell, E (1998): The coalescence of technology and humanism in nursing practice: It doesn't just happen and it doesn't come easily. *Holist Nurs Pract* 12(4), 23-30.
- Mc Dowell, I; Mac Lean, L (1998): Blending qualitative and quantitative study methods in health services research. *Health Informatics Journal* 4(1), 23-28.
- Mc Garry, J and Arthur, A (2001): Informal caring in late life: A qualitative study of the experiences of older carers. *Journal of Advanced Nursing* 33(2), 182-189.
- Mc Garvey, H; Chambers, M; Boore, J (2000): Development and definition of the role of the operating department nurse: A review. *Journal of Advanced Nursing* 32(5), 1092-1100.
- Mc Kenna Adler, A (1990): High technology: Miracle or malady for patient care. *Radiologic Technology* 61(6), 478-481.
- Mc Kenzie, GA; Mathers, SA; Graham, DT; Chesson, RA (2000): Radiographer performed general diagnostic ultrasound: Current UK practice. *Radiography* 6, 179-188.
- Mc Phillips-Tangum CA, Cherkin D.C, Rhodes L.A, Markham C, (1998): Reasons for repeated medical visits among patients with chronic back pain. *Journal of General Internal Medicine* 13, 289-295.
- Mead, G H (1934): *Mind, Self and Society*. University of Chicago Press, Chicago.
- Medical Devices Assessment Report 00047 (2000): *Market Guide 2000 Diagnostic Imaging Equipment*. HMSO. Norwich.
- Menninger. W W (1975): 'Caring' as part of health care quality. *JAMA* 234, 836-837.
- Menzies, I (1970): *The Functioning of Social Systems as a defence Against Anxiety*. Tavistock Pamphlet No 5.
- Meltzer, B N (1972): *The social psychology of George Herbert Mead*. Kalamazoo: Centre for Sociological Research, Western Michigan University.
- Merleau-Ponty, M (1962): *Phenomenology of Perception*. Routledge and Kegan Paul, London.
- Miles, M and Huberman, A M (1994): *Qualitative Data Analysis* Sage Publications, London.

- Mitcham C. (1994): *Thinking Through Technology: The Path Between Engineering and Philosophy*. The University of Chicago, London
- Moorhouse, C (Ed.) (1992): *Registered Nurse: The first year of professional practice*. La Trobe University Press, Melbourne.
- Morison, M; Moir, J (1998): The role of computer software in the analysis of qualitative data: Efficient clerk, research assistant or trojan horse? *Journal of Advanced Nursing* 28(1), 106-116.
- Morris, J (1991): *Pride against Prejudice*. The Women's Press, London.
- Morrison, P and Burnard, P (Eds.) (1991): *Caring and Communicating: The interpersonal relationship in nursing*. Mac Millan Education Limited, London.
- Morse, J M (1987): *Qualitative Nursing Research. (Revised ed)*. Sage Publications, California.
- Morse, J M (Eds) (1994): *Critical Issues in Qualitative Research Methods*. Sage, Thousand Oaks, CA.
- Morse, J M (1997): Learning to Drive from a Manual. *Qualitative Health Research* 7 (2), 181-183.
- Morse, J M (2000): Editorial: Determining sample size. *Qualitative Health Research* 10(1, January), 3-5.
- Morse, J M (2002): Editorial: Theory innocent or theory smart? *Qualitative Health Research* 12(March), 295-296.
- Morse, J M; Johnson, J.L (Eds) (1991): *The Illness experience: Dimensions of suffering*. Sage, Newbury Park, CA.
- Morse, J and Singleton, J (2001): Exploring the technical aspects of 'Fit' in qualitative research. *Qualitative Health Research* 11, 841-847.
- Mould, RF (1995): Invited review: Rontgen and the discovery of x-rays. *British Journal of Radiology* 68, 1145-1176.
- Mumford L, (1968): *The Myth of the Machine*. Harcourt Brace Joanovich, NewYork.
- Munhall, P (1983): Ethical Considerations in qualitative research. In: Munhall, P; Oiler Boyd, C (Eds) *Nursing Research: A Qualitative Perspective*. National League for Nursing. New York. p.395-408.
- Munro R. (1997): *Ideas of difference. Stability, Social Spaces and Labour Division*. In: Barnard A, Sandelowski M, 2001.

- Murcott, A (1981): On the typication of 'bad patients', In: Atkinson, P and Heath, C (eds). *Medical Work: Realities and Routines*. Aldershot, Gower.
- Murphy, E; Dingwall, R; Greatbatch, D; Parker, S; Watson, P (1998): Qualitative research in health technology assessment: a review of the literature. *Health Technology Assessment* 2 (16).
- Murphy, F J (1999): Information technology and the radiographer: Are we sitting comfortably? *Synergy* (October), 16-17.
- Murphy, F J (1999): How was it for you? Imaging technology and the patient experience. *Synergy* (July), 4-5.
- Murphy, F J (2001a): Lay Beliefs and Knowledge of Medical Imaging Procedures. *Journal of Diagnostic Radiography and Imaging* 4(1), p.9-15.
- Murphy, F J (2001b): Understanding the humanistic interaction with medical imaging technology. *Radiography* 7, 193-201.
- Murphy, K J; Brunberg, J A (1997): Adult claustrophobia, anxiety and sedation in MRI. *Magnetic Resonance Imaging* 15(1), 51-54.
- Murray, N; Stanton, M (1998): Communication and counselling oncology patients- are diagnostic radiographers adequately supported in this role? *Radiography* 4, 173-182.
- Nagle, L M (1998): The meaning of technology for people with chronic renal failure. *Holist Nurs Pract* 12(4), 78-92.
- Nixon, S (1999): Undergraduate research: Theory or Practice? *Radiography* 5(4, November), 237-249.
- O'Connor, G; Cotter, S (1998): Value of interpersonal encounter endorsed by patients as intervention in Magnetic Resonance Imaging. *Radiography* 4(2, May), 101-105.
- Oldenziel, R (1998): Review of Bernice L. Hausman's changing sex: transsexualism, technology, and the idea of gender. *Technology and Culture* 39, 179-181.
- O'Neill, J (1997): The five Bodies: The shape of human society. In: Modern medicine and the uncertain body: From corporeality to hyper-reality. *Social Science and Medicine* 45(7), 1041-1049.
- Orlikowski, W J (1992): The Duality of technology: Rethinking the concept of technology in organisations. *Organisation Science* 3(3, August) 398-427
- Orr, J E (1996): *Talking About Machines: An Ethnography of a Modern Job*. ILR Press/Cornell University Press, New York.

- Ozbolt, JG (1996): Nursing and technology: A dialectic. *Holist Nurs Pract* 11(1), 1-5.
- Pacey, A (1983): *The Culture of Technology*. MIT Press, Massachusetts.
- Palarm, T; Jones, K; Gilchrist, M (2001): Personal and professional development: a survey of radiographers employed in the South West region. *Radiography* 7, 43-53.
- Parsons, T (1952): *The Social System*. Tavistock Publications.
- Paterson, A (1994): Developing and expanding practice in radiography. *Radiography Today* 60(687), 9-11.
- Patton, M (1990): *Qualitative Evaluation and Research Methods*. 2nd edition. Sage Publications, London.
- Payne, K (1998): A pilot study of gender inequalities related to radiography education and career progression. *Radiography* 4, 279-287.
- Payne, S; Walker, J (1996): *Psychology for nurses and the caring professions*. Open University Press, London.
- Pelletier, D (1994): Technology. In: *Critical Care Nursing* (Romanini, J and Daly, J Eds). Harcourt Brace and Company, Sydney, pp.1039-1063.
- Pettigrew, A (2002): Ethical issues in medical imaging: Implications for the curricula. *Radiography* 6(4, November), 293-298.
- Pfaffenberg, B (1988): *Microcomputer Applications*. In: *Qualitative Research*. Sage, Newbury, CA.
- Philpin, S (2002): Rituals and nursing: a critical commentary. *Journal of Advanced Nursing* 38(2), 144-151.
- Pinch, T J; Bijker, W E (1984): The social construction of facts and artefacts: or how the sociology of science and the sociology of technology might benefit each other. *Social Studies of Science*, 14, 399-441.
- Polgar, S; Thomas, S (1995): *Introduction to Research in the Health Sciences*. 3rd ed. Churchill Livingstone, London.
- Polit and Hungler (1991): *Nursing Research*. Lippincott.
- Popper, K (1957): *The Unity of Method*. Routledge, London.
- Porter, S (1991): A participant observation study of power relations between doctors and nurses in a general hospital. *Journal of Advanced Nursing* 16, 728-735.

- Porter, S (1992): Women in a women's job: the gendered experience of nurses. *Social Science and Medicine* 14(4), 510-527.
- Postman, N (1992): Technology: The surrender of culture to technology. *Medical Anthropology Quarterly*. 13(2), 141-162.
- Price, B (1993): Dignity that must be respected; body image and the surgical patient: Psychological effects of surgery. *Professional Nurse* 8(10), 670-672.
- Price, B (2002): Methodological issues in nursing research: Laddered questions and qualitative data research interviews. *Journal of Advanced Nursing* 37(3), 273-281.
- Prime, N; Paterson, A M; Henderson, P I (1999): The Development of a curriculum- a case study of six centres providing courses in radiographic reporting. *Radiography* 5, 63-70.
- Prout, A (1989): Sickness as a dominant symbol in life course transitions: An illustrated theoretical framework. *Sociology of Health and Illness* 11(4), 336-358.
- Prout, A (1996): *Actor-network theory, technology and medical sociology: an illustrative analysis of the metered dose inhaler*. Blackwell, London.
- Purcell, C (1994): *White Heat: People and Technology*. BBC Publications, London.
- Purnell, M J (1998): Who Really makes the bed? Uncovering technological dissonance in Nursing. *Holist Nurs Pract* 12(4), 12-22.
- Rees, J; Davies, H; Birchall, C; Price, J (2000): Psychological effects of source isolation nursing (2): Patient satisfaction. *Nursing Standard* 14(29, 15 April), 32-36.
- Reeves, P J (1999): Models of care for diagnostic radiography and their use in the education of undergraduate and postgraduate radiographers. University of Wales, Bangor. PhD thesis.
- Reeves, P J; Murphy, F J (1998): Oral history as a technique for the professionalisation of student radiographers. *Journal of Diagnostic Radiography and Imaging* 1(2), 97-103.
- Reiser, S J (1998): Medicine and the reign of technology. In: Value of interpersonal encounters by Patients as intervention in Magnetic Resonance Imaging. *Radiography* 4, 101-105.
- Reisman, C (2002): Changing Self in the Interview Process. Conference Proceedings. Qualitative Research in Health and Social Care.

- Research Assessment Exercise (2001): *Guidance on Submissions*. Higher Education Funding Council England, May 1999.
- Rhodes, L; Mc Phillips, C; Markham, C; Klenk, R (1999): The power of the visible: the meaning of diagnostic tests in chronic back pain. *Social Science and Medicine* 48, 1189-1203.
- Rice, EP (1981): *Adolescent development: Relationships and Culture*. Allyn and Bacon, New York.
- Robertson I. (1998): Modelling the process of health visiting. *Information Technology in Nursing*, 10(1), 19.
- Robertson, S; Williams, R (1998): Working with men: A theoretical base for meeting their needs. *Nursing Standard* 15(10), 48.
- Robertson, S; Williams, R (2000): Working with Men: A Theoretical Base For Meeting Their Needs. In: Men's Health: A cause for Concern. *Nursing Standard* 15(10, 22 Nov), 48.
- Robinson, D (2002): *Using Photographs to Elicit Narrative Accounts*. Qualitative Research in Health and Social Care Conference. Abstract p.25.
- Robinson, P (1998): Pattern recognition and radiographer reporting. *Radiography* 4, 155-157.
- Robson, C (1993): *Real World Research: A Resource for Social Scientists and Practitioner Researchers*. Blackwell, Oxford.
- Rolfe, G (2002): Faking a difference: evidence-based nursing and the illusion of diversity. *Nurse Education Today* 22, 3-12.
- Roseham, N (1973): In: Brissett, D and Edgley, C (Eds) (1975): *Life as theatre: A dramaturgical sourcebook*. Aldine Publishing company, Chicago.
- Rowan RL. (1996): Automation: its effects on the hospital. *American Journal of Nursing* 62, 4-13.
- Salmon, B (1969): Nursing in the age of automation. *The New Zealand Nursing Journal* 62(12), 20-21.
- Sandelowski, M (1986): The problem of rigor in feminist research. *Advances in Nursing Science* 8(3), 27-37.
- Sandelowski, M (1994): Channel of desire: fetal ultrasonography in two use-contexts. *Qualitative Health Research*, 4(3), 262-280.
- Sandelowski, M (Ed.) (2000): *Devices and Desires : Gender Technology and American Nursing*. Chapel Hill, North Carolina.

- Sarvimaki, A (1988): Nursing care as a moral, practical, communicative and creative activity. *Journal of Advanced Nursing* 13, 462-467.
- Schmid, T; Jones, R (1991): Suspended identity: Identity transformation in a maximum security prison. *Symbolic Interaction* 14(4), 415-432.
- Schon, D A (1991): From technical rationality to reflection in action. In: *The Reflective Practitioner: How Professionals Think in Action*. Basics Books, 37-49. Guildford and Kings Lynn.
- Seedhouse, D (1986): *Health: The Foundations for Achievement*. Wiley. Wiltshire.
- Seidel, J (1998): *Qualitative data analysis. Qualis Research* (online), Qualis@qualisresearch.com, <http://www.qualisresearch.com>, 1-15. (Accessed 12/05/02)
- Shannon, M; O'Connor, G (2000): As we see ourselves: a proactive approach to interpersonal communication. *Journal of Diagnostic Radiography and Imaging* 2, 167-171.
- Sharman, M (1999): Dignity: A study of pre-operative patients. *Nursing Standard* 14(13-15, 15 December), 32-35.
- Sharp, L A (1995) Organ transplantation as a transformative experience: anthropological insights into the restructuring of the self. *Medical Anthropology Quarterly* 9, 357-389.
- Shaw, S (1996): Women workers and medical technology: Friends or foe? *Health Informatics* 2, 120-126.
- Shellock, F G; Kanal, E (1996): Claustrophobia, anxiety, and panic disorders associated with Magnetic Resonance procedures. In: *Magnetic Resonance Bio-effects, Safety, and Patient Management*. Lippincott-Raven, Philadelphia.
- Shibutani, T (1961): *Society and Personality: an Interactionist Approach to Social Psychology*. Englewood Cliffs, N.J Prentice Hall.
- Siemens Medical Engineering (Ed.) (1995): *100 years of x-ray, 100 years of innovation from Siemens*. Germany.
- Siemens Medical Solutions (1999): Computed Tomography from slices to volumes. *Innovations in Medical Engineering*, 24-28.
- Silverman, D (2001): *Interpreting Qualitative Data*. 2nd edition. Sage Publications, London.

- Simon, C M (1999): Images and image: Technology and the social politics of revealing disorder in a North American hospital. *Medical Anthropology Quarterly* 13, 141-162.
- Simon, E P (1999): Hypnosis using a communication device to increase Magnetic Resonance Imaging tolerance with a claustrophobic patient. *Mil Med (USA)* 164(1), 71-72.
- Society and College of Radiographers (2002): *Interim guidance on implementing the Society and College of Radiographers career progression framework in radiography*. SCoR 2002.
- Society of Radiographers (2000): *New Ionising Radiation Regulations Seminar*. University of Manchester 1st February 2000.
- Spouse, E; Gedroyc, W M (2000): MRI of the claustrophobic patient: Interventionally configured magnets. *British Journal of Radiology* 73, 146-151.
- Stein, L (1967): The doctor-nurse game. *Archives of General Psychiatry*. 16, 699-703.
- Stern, PN (1980): Grounded Theory Methodology: Its Uses and Processes. *Image* 12(7) 20-23.
- Stevens, R (1996): Technology and institutions in the twentieth century. *Caduceus* 12(winter 1996), 2.
- Stillion, J (Ed.) (1995): Men's Reaction to Illness, In: Luck, M Bamford, M Williamson, P(eds.) *Men's Health: Perspectives, Diversity and Paradox*. Blackwell Science 2000, .
- Strange, F (2002): The persistence of ritual in nursing practice. *Clinical Effectiveness in Nursing*. 5, 177-183.
- Strauss, A L (1978): *Negotiations*. Jossey-Bass, San Francisco.
- Strauss, A L (1985): *The Social Organisation of Medical Work*. Chicago University Press, Chicago.
- Strauss, A L; Corbin, J (1990): *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Sage. CA.
- Strauss, A L; Corbin, J (1994): Grounded Theory Methodology: An Overview. In: Denzin, NK; Lincoln, YS (Eds) *Handbook of Qualitative Research*. Thousand Oaks, Sage, CA.p. 273-285.
- Strauss, A L; Fagerhaugh, S; Suczek, B; Wiener, C (1982): Sentimental work in the technologized hospital. *Sociology of Health and Illness* 4(3), 253-278.

- Streubert, H and Carpenter, D (1999): *Qualitative Research in Nursing: Advancing the Humanistic Imperative (2 nd Edition)*. Lippincott Williams and Wilkins. Philadelphia.
- Stryker, S (1959): Symbolic interaction as an approach to family research. *Marriage and family living* 22, 111-119.
- Stryker, S (1980): *Symbolic Interactionism: A Social Structural Version*. Benjamin/Cummings, Menlo Park, California.
- Suzuki, J; Shimatoto, R; Yamazaki, T; Tsuji, T; Nishikawa, J; Nakamura, F; Sugiura, S; Takahashi, T; Nakajima, T; Toyo-oka, T; Nagai, R; Omata, M; Ohotomo, K (2000): Screening and/or follow up with coronary magnetic resonance angiography: comparison between two dimensional techniques. *Radiography* 6, 189-197.
- Tanner, J; Timmons, S (2000): Backstage in the theatre. *Journal of Advanced Nursing* 32(4), 975-980.
- Thorpe, D; Owens, R G; Whitehouse, G; Dewey, M (1990): Subjective experiences of Magnetic Resonance Imaging. *Clinical Radiology* 41, 276-278.
- Timmermans, S (1996) Saving lives or saving multiple identities? The double dynamic of resuscitation scripts. *Social Studies of Science* 26, 767-797.
- Timmermans S (1998): Mutual tuning of multiple trajectories. *Symxboic Interaction* 21, 425-440.
- Turner, V (1982): *From Ritual to Theatre: The Human Seriousness of Play*. Performing Arts Journal Publications, New York.
- Tutty, L; O'Connor, G (1999): Patient information leaflets: some pertinent guidelines. *Radiography* 5, 11-14.
- Van Manen, M (1998): Modalities of body experience in illness and health. *Qualitative Health Research* 8, 7-24.
- Villeneuve, C; Laroche, C; Lipman, A; Marrache, M (1998): Psychological aspects of Ultrasound imaging during pregnancy. In: Value of the interpersonal encounter endorsed by patients as intervention in Magnetic Resonance Imaging. *Radiography* 4, 101-105.
- Walker, K (1994): Confronting reality: Nursing, science, and the micro politics of representation. *Nursing Inquiry* 1, 46-56.
- Walsh, M; Ford, P (1989): *Nursing Rituals, Research and Rational Action*. Butter-Heinemann, Oxford.

- Ward, P (1999): *Spare a thought for the patient; The need to reduce MRI anxiety remains a critical challenge*. Diagnostic Imaging Europe (online) M 9712, 1-2. <http://www.dimag.com>(Accessed 3 rd Jan 1999).
- Warnock M.(1998): *An Intelligent Person's Guide to Ethics*. Duckworth, London.
- Whyte, WF (1984): *Learning from the field*. Sage Publications, CA.
- Whittemore, R; Chase, S; Mandle, C (2001): Pearls, Pith, and Provocation: Validity in Qualitative Research. *Qualitative Health Research* 11(July), 522-537.
- Wicks, D (1998): *Nurses and Doctors at Work: Rethinking Professional Boundaries*. Open University Press, Buckingham.
- Williams, P L; Berry, JE (2000): What is competence? A new model for diagnostic radiographers: Part 1. *Radiography* 5(4), 221-235.
- Williams, S (1997): Modern medicine and the "uncertain body": from corporeality to hyper-reality. *Social Science and Medicine* 45(7), 1041-1049.
- Wilmot, S (1993): Ethics, agency, and empowerment in nurse education. *Nurse Education Today* 13(3), 189-195.
- Wilson, E (1981): Nursing care in a technological age. *The Journal for Nursing leadership and Management* 12 (6), 59-62.
- Winner, L (1986):*The Whale and the Reactor*. University of Chicago Press, Chicago.
- Winner, L (1977): *Autonomous Technology*. MIT Press, Massachusetts.
- Wiseman, J (1974): *The Research Web*. Urban Life and Culture. 3, 317-328.
- Wiseman, J (1979): *Close Encounters of the Quasi-Primary Kind: Sociability in Urban Second-hand Clothing Stores*. Urban Life.
- Witz, A (1992): *Professions and Patriarchy*. Routledge. London.
- Wolcott, HF (1980): How to look like an anthropologist without really being one. *Practice Anthropology* 3 (2) 56-59.
- Young, TR (1999): *Dress, Drama and Self in Mass Society*. [http:// www.tryoung.com/dramasociallife](http://www.tryoung.com/dramasociallife).
- Young, TR (2001): *The Drama of Social Life: Essays in critical dramaturgy*. <http://www.tryoung.com/dramasociallife/000intro.htm>. (accessed on 04/01/2001).

Zborowski, M (1952): Cultural components in response to pain.
Journal of Social Issues 8, 16-30.

Bibliography

- Baker, M; Weug, D; Crommelin, M; Lybeert, M; (1999): Information for the radiotherapy patient. *Radiography*, 5, 99-106.
- Brause, R S (2000) *Writing Your Doctoral Dissertation: Invisible Rules For Success*. Falmer Press, London.
- Cook, D.J, William, J, Sibbald; (1999): The promise and the paradox of technology in the intensive care unit.
Canadian Medical Association Journal, 161: 1118-9.
- Crowe, B.L; (1999): The Hospital of the 21st Century: Impact of Technology on Facilities Development – New Directions in Technology.
The Radiographer, Volume 46.
- Cole, P.C (1994): Finding a path through the Research Maze.
Volume 2, Number 1.
- Coumans, J; (2001): The future of Magnetic Resonance Imaging.
RAD Magazine, 27, 309, 35-36.
- Davidhizar, R; Dowd, S B; Newman-Giger, J (1997): Model for Cultural Diversity in the Radiology Department. *Radiologic Technology* 68(3), 233-238.
- Karim, K; (2000): Conducting Research involving palliative patients.
Nursing Standard, 15, 2, 34-36.
- Lawler, J; (1991): *Behind the Screens: Nursing Somology and the Problem of the Body*. Churchill Livingstone, London.
- Lemert, C; Branaman, A (1997): *The Goffman Reader*, Blackwell, Cambridge.
- Manning, P (1992): *Erving Goffman and Modern Sociology*, Polity.
- McColl, E; Thomas, L; Bond, S; (1996): A study to determine patient satisfaction with nursing care. *Nursing Standard*. 10, 52, 34-38.
- Goffman, E (1961): *Encounters: Two Studies in the Sociology of Interaction* Bobbs-Merrill.
- Goffman, E (1981): *Forms of Talk*. University of Pennsylvania Press.
- Goodman, C; (2001): *Metaphors*. Blackwell Science Ltd.
- Geisler, E; (1999): Multiple Perspectives Model of Medical Technology.
Health care Manager Rev, 24(3), 55-63.

- Howell, J D (1995): *Technology in the Hospital*. John Hopkins University Press, Baltimore.
- Patton, M Q (1978): *Utilization-focused evaluation*. Sage, CA.
- Prior, L; Pang, Lai Chun; See, Beng-Huat; (2000): Beliefs and accounts of illness. Views from two Cantonese-speaking communities in England. *Sociology of Health & Illness*, Vol. 22, No. 6, 815-839.
- Newell, R; (2000): Writing Academic Papers: the Clinical Effectiveness in Nursing Experience. *Clinical Effectiveness in Nursing*, 4, 93-98.
- Malone, R.E; (2000): Dimensions of Vulnerability in Emergency Nurses' Narratives. *Advance Nursing*, 23 (1), 1-11.
- Miller, J; (1995): *The Presentation of Self in Electronic Life: Goffman on the Internet*. Paper presented at Embodied Knowledge and Virtual Space Conference.
- Pasveer, B; (1989): *Knowledge of Shadows: the introduction of X-ray images in medicine*. *Sociology of Health & Illness*, Vol. 11, No. 4.
- Richer, M.C; Ezer, H; (2000): Understanding beliefs and meanings in the experience of cancer: a concept analysis *Journal of Advanced Nursing*, 32(5), 1108-1115.
- Saysell, M.A; (1996): An Introduction of Paediatric Magnetic Resonance Imaging. *Radiography*, 3, 31-41.
- Wilkinson, J.A; (1999): Understanding patients' health beliefs. *Professional Nurse*, Vol. 14. No. 5.
- Vaughan, D; (1999): The Role of the Organization in the Production of Techno-Scientific Knowledge. *Social Studies of Science*, 913-43.

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Appendix 1

The impact of technology and change on patients

What is the purpose of this study?

It is hoped to discover what it is actually like for (you) a patient to have a scan. The information given will aid our understanding and may help patients in the future. This study will contribute towards part of a higher degree.

Are there any complications or risks?

No, there are no complications or risks at all, your identity will remain completely anonymous and anything you say will be treated confidentially. Your medical history and the results of the scan will not be discussed at any stage. This study does not form part of the actual scan, you are therefore; not obliged to participate and if you decide not to be interviewed this fact will not be recorded or affect your future hospital care in anyway.

What is involved

An audiotape recorded interview (anonymous) for a maximum of one hour, usually on the same day as your scan, at a time convenient to you. The tapes will be stored in locked cabinet and destroyed immediately after transcription (typing). You are free to withdraw at any stage and this will not affect your future hospital care in anyway. Any information given will be treated in strictest of confidence.

If I volunteer how will I be contacted?

Please inform the radiographer that you wish to be a volunteer. You will be contacted by a member of the ward staff to arrange a convenient time for the interview to take place. You will be asked to sign a consent form before the interview commences. If you are discharged from hospital before the interview has been arranged you will not be contacted at home.

PLEASE RETAIN THIS INFORMATION SHEET AND IF YOU HAVE ANY QUERIES OR QUESTIONS ABOUT THIS RESEARCH PLEASE DO NOT HESITATE TO CONTACT ME.

Thank you

**Fred Murphy Lecturer Practitioner School of Radiography (U.W.B)
TEL: 01978 316201**

Research consent form

The impact of technology and change on patients

Please cross out as necessary, answering all the questions:

Have you read the patient information sheet? YES/NO

Have you had the opportunity to ask questions
and discuss this study? YES/NO

Have you received satisfactory answers
to all your questions? YES/NO

Who have you spoken to? _____

Do you understand that you are free to withdraw from the study:

- at any time
- without having to give a reason
- and without affecting your future medical care? YES/NO

Do you agree to take part in this study? YES/NO

Signed _____ Date _____

NAME – IN BLOCK LETTERS _____

Signature of witness _____ Date _____

Appendix 2

Original documents with identifying letterheads are available for inspection from the researcher.

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Please refer to the original text to see this material.

Appendix 3

Original documents with identifying letterheads are available for inspection from the researcher.

MEMORANDUM

TO:

FROM: 3rd party copyright material excluded from digitised thesis.

DATE: Please refer to the original text to see this material.

Re: **R&D Project Registration Forms: 00KA001-Impact of high technology imaging equipment on patients and radiographers**

I am writing to acknowledge receipt of the fully completed Form for the above project, together with your correspondence.

I am pleased to inform you that the R&D Committee has granted management approval and the project has been entered into the Trust's R&D Project Database. The Trust's indemnity is in place for staff working on the project.

I look forward to receiving a copy of your appropriate project progress and outcome report in due course.

Best wishes,

Yours sincerely,

A handwritten signature in cursive script, appearing to read 'A. Hart'.

Appendix 4

Appendix 4 Initial Patient Interview Questions

- 1. Can I ask was that your first C.T scan?**
- 2. What did you expect was going to happen?**
- 3. Did anyone explain it to you before you came down?**
- 4. Did you have any written information before you came down?**
- 5. How did you actually find the scan?**
- 6. If someone else in your family was coming along to have one of these scans, how would you explain it to them?**
- 7. Obviously I do not expect any technical details, can you tell me how that machine works?**
- 8. Might you have any suggestions as to how we might be able to improve the whole experience for future patients?**

Appendix 5

Radiographers required for research study

*Understanding the humanistic interaction with high technology
imaging equipment (HSA/COR Scholarship Award 2000)*

In order to fully appreciate the reality of what it is like for patients to have a CT or MRI scan I would like to interview radiographers who have themselves experienced problems or difficulties when having a scan as a patient (Murphy, Synergy, July 1999). Any information given will be completely confidential, your medical details or the radiology department will not be discussed at any stage. I am purely interested in your thoughts and feelings about the technology from a patient's perspective. This will complement data already derived from patients themselves, for which, multi-centre ethical approval has been granted.

If you feel that you may be able to assist in this research then please contact me directly. This will involve no cost on your behalf and any assistance would be greatly appreciated.

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Appendix 6

Appendix 6 List of Full codes within Maxqda programme

Code System

- 1.0 Free codes/ works in CT/MR
 - 1.3 Years qualified
 - 1.1 Age
 - 1.2 Previous scan
- 2.0 Concerns
 - 2.1 problems
- 3.0 Expectations
- 4.0 Feelings
- 5.0 Information
 - 5.1 Description
- 6.0 Knowledge
- 7.0 Misconceptions
- 8.0 No Problems
- 9.0 Other radiology
- 10.0 Reaction in scan
- 11.0 Recommendations
- 12.0 Satisfaction
- 13.0 Explanation
- 14.0 Analogies
- 15.0 Communication
- 16.0 Control
- 17.0 Coping Strategies
- 18.0 Symbolic Significance
- 19.0 Isolation
- 20.0 Perceptions of the radiographers
- 21.0 Moulding Preconceptions
- 22.0 Stories
- 23.0 Self
- 24.0 Orientation
- 25.0 Technological association
- 26.0 Memories
- 27.0 Compliance
- 28.0 Career development
- 29.0 Modality choice
- 30.0 Role models
- 31.0 Technological Influence on the profession
- 32.0 Barriers to communication
- 33.0 Gender Compliance
- 34.0 Claustrophobia

Definition of Codes (Appendix 6)

Code 1.0 free codes\1.1 age

To assess the range of ages of the interviewees.

Code 1.2 Previous Scan

How many times they had had a scan previously

Code 1.0 free codes\1.3 Years qualified

Relevant only to the radiographer interviews. Records experience as a radiographer.

Code 2.concerns

Anything that worried the patient in anyway before, during, and after the scan.

Code 3.expectations

These are the thoughts of the patient in terms of what they were expecting to happen.

Code 4.feelings

Full range of emotions anger, fear, nervousness, enjoyment.

Code 5.information

The amount of information received by the patient and the value of it.

Code 5.1 Description

The manner in which the details of the scan were explained to the patient.

Code 6.knowledge

The knowledge that the patient had of the scan/procedure, in particular the workings of the equipment.

Code 7.misconceptions

Any thoughts or ideas that can be considered to misconceptions about any part of the whole process. In particular misconceptions about the technology itself.

Code 8 No problems

This deals with the positive aspects of the imaging procedure.

Code 9.other radiology

Reference to any other radiological investigation or piece of high technology imaging equipment.

Code 10.reaction in scan

This relates to how the patient actually felt when inside the scanner.

Code 11.recommendations

At the end of each interview each patient is asked to make some recommendations as to how we can improve the entire experience.

Code 12.satisfaction

Simply the level of satisfaction of the patient.

Code 13. Explanation

How the patient would describe the scan to someone else in the family. These should be in lay-mans terms.

Code 14 Analogies

Was the procedure similar to anything else in life however strange or bizarre?

Code 15 Communication

Any method of communication between patient, scanner, radiographers and others.

Code 16 Control

Reference towards being in command of the situation. Phase one suggested the emergency button gives some patients an element of control.

Code 17 Coping Strategies

Any method that enables the patient to cope with the examination.

Code 18 Symbolic Significance

Pictorial representation and the impact of seeing the scanner (Berg, 1999, Charon,2001)

Code 19 Isolation

Mention of isolation during the procedure

Code 20 Perceptions of the Radiographers

Establish if patients are aware of radiographers' roles and identity.

Code 21 Moulding Preconceptions

The influence of family, friends, media and others in developing expectations and understanding.

Code 22 Stories

Specific narratives that contribute towards shadowed data.

Code 23 Self

The significance of self within the interaction.

Code 24 Orientation

The alignment of the patient with respect to the scanner.

Code 25 Technological Association

Specific instances that relate to the interaction with technology.

Code 26 Memories

Recalling traumatic events earlier in life.

Code 27 Compliance

The desire to keep still and hold their breath in order to comply with instructions.

Code 28 Career Development

This questions the point raised by Orlikowski (fig2.2) that imaging technology influenced radiographer career development.

Code 29 Modality Choice

Ascertain the reasons why radiographers worked in these units.

Code 30.0 Role Models

Specific qualities identified by radiographers with regard to socialisation.

Code 31.0 Technological Influence on the Profession

The impact technological advancement has had on the radiography profession.

Code 32.0 Barriers to Communication

This code considers both physical and psychological barriers to communication identified by radiographers.

Code 33.0 Gender Compliance

Reference towards any differentiation between the compliance of females against males.

Code 34.0 Claustrophobia

Reference to the complex phobia.

Appendix 7

..1.1age

CTFEM1 age 42

**I.Thank you for agreeing to be interviewed.
First of all if I could just ask you what type of scan
you've just had.**

CT scan, that's all I know.

I.And do you know what it was for?

Yeh, for me gall bladder, liver and kidneys.

I.And you've had a CT scan before you say?

--1.2 previous scan

Yes, once that was for the.. nasal.. two weeks ago

**I.Right, what were you expecting to happen before you came
down?**

That it would be like a big tunnel machine, that you
literally went into and you couldn't see nothing, but it's
not like that at all.

misconceptions
3.expectations
4.feelings

I wasn't scared but I was a bit wary about the tunnel, but
when I seen it ...it was alright, it was fine. So that didn't
frighten me at all.

I.What sort of information were you given before the scan?

Nothing really, because when I came in for the operation on
my nose, I... they just sent me down the same day because they
couldn't operate because me sugars were all upside down. So
I had a C.T. scan so not a lot of information at all because
I didn't know I was having a needle or a drink or anything.
All I know was that I was told I was coming down for a scan,
the same as the other day -where it went round and took a
picture until they came and stuck that needle in me.

5.information
..description

I.You weren't given anything to read ?

No... and I didn't know that I was having the drink either((concerned expression)).

2.concerns
5.information

**I.So, when you actually got down here - let's take today's
scan, its a bit more involved.**

Yes

I.What were your feelings, were you apprehensive?

No `cos I've had one before a couple of weeks ago.

4.feelings

I.Right

And they brought me the drink and that, which is fair enough
because I understand that, but when they said about the
injection I didn't understand that one, only `cos I don't
like it mind.

2.concerns
5.information

I.Do you know what the drink was for?

No... to show up better inside was all I was told.

I.Right, what about the injection

To show up better inside as well ((laughter))... they didn't
say what it was for, no.

5.information

12.satisfaction

I.Were you happy with the way you were treated?

Yeh, oh I yeh

I.Did you find any part of it intimidating the microphone system or anything?

No, to tell you the truth when I go in there and get on that bed I close my eyes, and open them again when the needles out. What was that drink for?

I.To show your insides up, particularly the bowel, it's like a dye and helps us to get better pictures.

Is there any part in this scan that you think we could improve?

2.concerns
7.misconceptions
3.expectations

No, it was alright, definitely not what I thought, I did expect a tunnel where you were trapped inside and couldn't be seen - that's what I'd heard about the scanner like, but it's not like that at all.

12.satisfaction

I.Right, one more question - you would obviously be happy to have another one?

Oh yes - without the needle

..2.1 problems

I.The needle then really was the problem?

Yes - I can inject myself ((diabetic)) but when other people do it, I'm terrified of them, I don't know why.

I.Finally, in your own words, obviously I don't expect you know anything technical about the equipment, what do you think a CT scan does?

6.knowledge

....The only I can think of is emm.....Well obviously when you have an x-ray it shows up your insides, but a CT scan looks deeper into it. That's all I know about it I think, that's it really

Thank you very much

CTFEM2

Age 65

..1.1age

**I.First of all, thanks for agreeing to this little interview.
Can I just ask you first of all what scan you`ve just had,**

Well all I understand is that its all down the body - like taking photographs of it, as far as I know.
Nobody`s told me anything.((concerned expression))

..description

I.Have they not, you don`t know the name of the scan.

2.concerns
5.information

No, what do they call it?

I. A CT scan.

Oh, that`s it is it? Oh! They mentioned something, but I didn`t know what it was.

I.Right, I see, and do you know why you had this scan?

To see how my stomach is, to see what`s gone wrong with it,.... I think.

I.Right that`s fine, and what were you expecting to happen before you came down?

4.feelings
misconceptions

Nothing, only I was scared of going in that tunnel - some people said it was a big thing, you know some people have known before that have gone down.

I.What exactly have they said to you?

2.concerns
3.expectations
..2.1 problems
7.misconceptions

Oh you know, they said you get claustrophobic but you don`t, it was quite alright, just holding your breath a bit longer, it was alright, but my arms ached a bit when you`ve got them behind you and I felt the stuff that went down there warmed me all up. I don't know what that was ((laughter))

I.Was that not explained to you?

2.concerns

Well no, but it doesn`t matter I just took the chance.((laughter))

I.Were you given any information before the scan, were you given anything to read?

No.

5.information

I.Was anything explained to you.

..description

No, just that you go down and had this scan and they take photographs of the body, I suppose in different stages. That`s all.

I.So when you actually got down here(C.T.), you thought you were going to go into this big tunnel ?

((nods inagreement))

10.reaction in scan

I.What was it actually like?

10.reaction in scan

It was quite nice, just to see it was half and was not a big thing, you weren't shut in, that was the main thing, I can manage that.

I.Machinery all around you, did that bother you at all?

No, once they tell you for the first one, then wait until he tells you the second time, you know, you get to do it. Its obvious, you breathe in and hold your breath.

I.OK, so you were given plenty of instructions whilst you were in the room.

Yes, very good

5.Information

I.So you weren't apprehensive at all after that?

4.feelings

No,not after that

I.You were given an injection in your arm, did anyone explain the purpose of that?

I thought she said it was a dye, to go round, it felt warm, I could feel it going warm in me, you know, and then it went off. I think that's what she said...it would show up.

4.feelings

I.Right. did you feel isolated at all in there?

No, no I didn't really. It was quite bright and everything, you know, I didn't feel any pressure, you know.

I.That's nice to hear

If there was something we could do to improve the process next time round for somebody else shall we say, what can you think of ?

11.recommendations

I should tell them not to worry, that its just straightforward, and there is nobody a bigger coward than me ((laughter))

I.You've not had one of these scans before?

..1.2 previous scan

No

I.Have you had normal x-rays?

Yes, I've had normal x-rays. I think I came here for front and eh...no stomach x-ray about a week Friday - You know I get muddled up with the hospitals, I think it was the other hospital, I think I went there.

I.How did this compare with a normal x-ray then?

12.satisfaction

This scan ? It's quite good, yes very good I enjoyed it ((laughter))

I.Thank you very much

CTFEM 3

age 69

1.1 age

I. Interviewer.

Thank you first of all for agreeing to have this done.

1.2 previous scan

I. Was that your first C.T. scan?

Yes

I. Can I ask you what you were expecting to happen?

3. expectations

Emm,...well only what other people have told me, you know, my daughters had one although that was some time ago and she said that emm.. It wasn't a happy experience for her I don't think, in fact it was a very unpleasant, experience for her, she had terrible headaches after she'd had it done. ((Sincere tone))

4. feelings

12. satisfaction

My mother has also had one, of course she was elderly, eh,.. she told me that she didn't enjoy it all. Because you come down here and see all of these huge machines and you think well what's going to happen to me in there?

4. feelings

I wasn't that bothered ..emm, about having it done because it thought I want to have it done, so that it can put my mind at rest really. But it's just that with the headaches that I have been having, and I started having one as soon as I went in, whether it was a coincidence or fear or perhaps a combination of both, I don't know. But I have these pounding, pounding headaches ((intense facial expression)) and this is why I've me.. ,well why I am here really, high blood pressure. Because even though my blood pressure is now quite, quite low, I am still having these headaches.

3. expectations

I. So your daughters had one and your mothers had one is that correct?

Yes, and neither of them enjoyed it at all.

5. information

I. Did they tell you what was going to happen to you beforehand?

misconceptions

10. reaction in scan

Well I think most people think emm, it's claustrophobic. I shut my eyes going in and kept them shut all the time. But I was worried.

I. Were you given any information before you had this scan taken?

description

No, nothing just that I was being sent for a C.T. scan. The staff down here ((radiology)) told me as I was going in that it would only take 3 or 4 minutes which I was told it would take 20 ((nervous laugh)).

5. information

I. Who told you that?

I think my daughter did or some of the patients on the ward. Mind you my daughter had a ... I think it was an MRI scan so it would have taken longer. The other patients thought it would be at least 20 minutes.

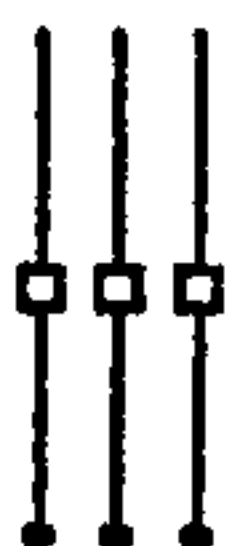
4. feelings

I. So could you tell me about the experiences you felt when you went into the room?

reaction in scan
2.1 problems
2.2 concerns

I can't honestly say that it frightened me, worried yes, you know it's like I said just talking about the reason

10.reaction in scan
 .2.1 problems
 2.concerns



for going in set off this headache. I just thought you know well I can't bear this pain. The thought of going inside there and perhaps...but at the end of the day I tolerated it so you know it's just as well.

I. Did you feel isolated or remote from the staff in anyway?

No not really

I. So if someone else, say in your family was coming along now to have one of these scans, how would you explain it to them?

13.your explanation



Well I would say that there is nothing to be frightened of, it's painless, and it doesn't take long. The staff are really reassuring and helpful.

I. Have you any idea at all what this scanner does?, obviously I don't expect any technical details or anything like that.

6.knowledge



It's a type of x-ray that emm.... takes deep x-rays of different parts it is different from an normal x-ray. Well a normal x-ray is just flat isn't it, this goes in layers and takes deeper and better pictures and gives you more information. It's something like that anyway.

I. Great you are only one of a few people to understand that, well done

6.knowledge



I've probably read about it, I am a nurse, well a mental health nurse not a general nurse.

I. Oh I see, that might explain it. May I thank you very much for giving up the time to be interviewed thank-you.

CTFEM4

Age 62

..1.1age

I. You have had a C.T scan before?

Yes, in April 1999 that was my first one

1.2 previous scan

I. Can I ask you what you were expecting would happen?

Well, I am the type of person that will accept everything that comes. I don't get frightened by anything, so em I knew the type of thing to expect through my nursing experience. It was uncomfortable lying down on the table especially if you have a bad back, you know after nursing for all these years. But otherwise nothing too claustrophobic or anything. I am prone to claustrophobia a little bit. The sound was a bit strange you know the "breath in, breath out".

4. feelings

2. concerns
3. expectations
3. expectations

4. feelings

I. Did that worry you in any way?

No not really [laugh] I just worried whether I was breathing in or out in the right sequence.

I. Obviously your nursing history has prepared you a little for what was going to happen, but did you receive any information on the ward?

Well when I came down for the C.T scan in April, I was an outpatient, you know from home, so I had the little brochure and everything to tell me all about it.

..description

I. Did you find that useful?

Yes, I did actually, I certainly helps.

5. information

I Did anyone give you any information on the ward before you came down today?

No,[laughs} have I put my foot in it?

I. No, not at all

I think because they knew I had been before, you know, they didn't think that I needed to know. But, no, no information now you mention it.

I. If someone was coming along for a C.T.scan that hadn't had one before what would you tell them?

I would say don't be intimidated by all the machinery in the room and just take deep breaths and try and relax, I think that relaxing around this machinery is important. This is a difficult question , because nobody relaxes let's be fair. It's the anticipation but once you have been youwell thank god your not asking this questions to my husband. He would be shaking like a leaf, his mother was a district nurse and in those days, you know, I think she put the fear of god in him, it's a shame.

4. feelings
1.3 your explanation

I. Okay thanks for that; the idea is to try and improve the service for future patients

11.recommendations

Well there is one thing that I do get upset about, it's nothing to do with the x-ray department really, but say when you call the nurse and they say, 'I won't be a minute,' now I know they are busy, but that minute to a patient is a long time. And it's 10 minutes or twenty minutes never a minute, now I understand that, but other patients they don't.

I. Sure that is a very good point, so the final question really, can you tell me what that machine does in there, the C.T Scanner what would you say?

6.knowledge

Wonderful photography, ...you mean what does it do? Oh I see ,well it takes pictures, section by section as if you were dissecting your body with a very sharp knife and taking sections of your body coming up and up or down and down, I am not sure of which way it goes. I mean I have a lot thank this hospital for especially the ultrasound. I came in on March 25 th and scanning for gall stones thank god they found a tumour on my kidney. Otherwise I would be walking around with it today. But it was great to see the pictures up against the light and knowing a bit about medicine and everything you could take it in, and you know, clearly see the tumour on the ultrasound and of course the C.T. But my worse experience was with a barium enema, just couldn't get rid of it![laughs]. I have been coming down for an x-ray everyday of my stomach to see how far it has wandered along, and emm the last x-ray I had was on Friday and I have been expecting the C.T since then, so I prayed for it come. So thank god, I can at least have it done today.

9.other radiology

I. Okay thanks for that

Have I answered all your questions?

I. Yes you have thank you very much indeed.

CTFEM5

Age 72

..1.1 age

I. May I ask is that your first C.T scan?

Yes it is

..1.2 previous scan

I. Can you tell me what you expected to happen?

Ehm my husband has had an MRI scan and he has also had a bone scan in another hospital, so I expected something similar to his experiences, but I was told by one of the nurses that it was more like a ' polo mint scan' rather than a complete scan like the MRI.

3. expectations
5. information
..description

I. Were you concerned in any way about it?

I didn't have time to be ((laughs)) I didn't really have time to concentrate on it, it all happened so quickly. You see, I was only informed that I maybe having the scan this morning.

5. information

I. Did you receive any information before you came down for this scan?

No, only that it was because I had dizziness and that it was a bit like a polo. I already knew that it was a little noisy from my husband.

I. Can you tell me what you experienced when you went into the scan room?

Very comfortable, in fact I think I nearly went to sleep ((laughs)), I closed my eyes and it was slightly noisy, but no, it was perfectly all right. I thought that it might bother me but it didn't. It seemed like a long time, I think they were searching for my brain ((laugh)).

5. reaction in scan
30.0 Role models
4. feelings

I. Were you given any written information on the ward, anything to read?

No, just what the nurse told me about the polo mint, but I did have to ask for the information and she [the nurse] told me it was like going through a polo mint.

5. information
..description

I. If some else in your family were coming along for one of these scans; how would you explain it to them?

I think that I would say that it was nothing to worry about, and I am a great worrier by the way, and that you lie down very comfortably, and it's a bit noisy, and it's like going inside you know..you know a ' polo mint.' I actually think that describes it very well; it does seem a long time that is the only thing, it says 10 minutes but it seems longer than that much longer.

13. your explanation

I. Obviously I do not expect you to know any technical details at all, but do you know what that machine does?

Ehm, well the girl [radiographer] in there [scan room] told me that it was looking at my blood vessels and my sister is actually a retired geriatric consultant, from working here and what not, so I am aware and have worked with several nurses, so perhaps I don't know much but certainly a bit. Well a bit more than most shall we say. I think it shows slices of your brain as it goes through, that's what I think it does but I don't know, but whether I am right about that or not I do not know? I think that way they can pick up anything unusual and see what is

6. knowledge

6.knowledge □ going on.

I. Very good, finally, I am trying to make recommendations for the future in terms of what happens and how we can improve the service. Have you any ideas?

I think if I had not come in as an emergency and had know, say last week what was going to happen, I would like to have had details to read about exactly what will happen.

Ehm, I think some of the ideas you pick up from watching things like Tomorrows' World, those sort of helpful documentary programmes, are helpful and can show you what to expect. But with anything, I like to know what is going on and I think to have details to read when you are quiet at home is very helpful. Or perhaps someone to talk to before the scan might be nice, but is never the time is there?

Reassurance is the main thing there is a lady in the ward next to me who was having a C.T scan yesterday, but I think it was on here stomach, but she was obviously very very you... know anxious.

Yet if you ask my family they will say that I am an anxious person, but because everything happened so quickly, I didn't have time to think about it, and I just got on with it. We have made great use of the hospital this year so I hope we will not be such a nuisance to the hospital next year.

Field notes

After the interview she commented that something to hold whilst having the scan would be nice and take the patients' minds off what was going on.

5.information
11.recommendations

4.feelings

CTFEM6

Age 54

..1.1age

I. Is this the first C.T scan that you have had?

Yes it is

I. Could you tell me then please; what you were expecting to happen?

At first I got it confused with the MRI scan I have seen that on casualty.. and I thought ohh! ((fearful expression)) but it wasn't it was fascinating absolutely fascinating.

I. So you thought it was the MR scan would that have been a problem for you do you think?

No I don't think so, to be fair it [MR scanner] just looks imposing doesn't it the way you have to go down ...you know through the tunnel.

I mean I only knew about this scan last night so I didn't have too long to think about it really.

I. Were you given any details written or verbal before you came down?

Yes well, ehm the staff nurse told me about it, she said that it wasn't the MR scan and he drew a rough picture in the air and showed me and then I'd seen then. Then I realised what it was and he told me that there was no claustrophobia whatsoever and there wasn't anything like that.

I. Fine, can you tell me what you experienced when you went into the room?

Ehm..relaxing really I wasn't frightened in anyway or anything at all really, it was just free and easy, and I just found it fascinating, you know, watching it. You know the whole thing spinning around me it was amazing and I really would like to know just how it works.

I. I am going to ask you that in a minute ((laughter)), so if say someone in your family was going to come along now and have one of these scans how would you explain it to them?

Well I would tell them ehm..it would depend whether it was a child or not I suppose, but for say my son, I would say that he was coming to have a photograph taken of his brain. If they were worried then I would tell them exactly what had happened to me and I do know not to lie; as a ward clerk I know just how important that is.

I. Okay can you suggest how we might be able to improve this experience, if at all, for patients coming down?

Something in writing maybe a leaflet or something would be nice, I haven't seen any leaflets especially for the elderly people they may well appreciate that, and well I know the nurses sit and chat with them but, yes a leaflet would be nice. Or maybe give a leaflet to a member of their family, and they could discuss it amongst themselves, because I bet the families don't understand do they? You know the sons and daughters and they want to know what it is because it can sound quite horrifying. You see a lot of people come and ask me as the ward clerk, what is it they say? and you stand there, and you know well.. I have to say I don't know. We don't have any

7. misconceptions
3. expectations

4. feelings

5. information
..description

..description

4. feelings

2. reaction in scan

13 your explanation

2. recommendations

11.recommendations

..2.1 problems

leaflets on the medical floor, but there again I haven't looked really, so there maybe something. I just ask the staff nurse if I don't know the answer but the point is that most people will not ask in first place will they? Because they are frightened to know and I suppose if you have no idea then it can look quite frightening. Be reassured really.

I. Absolutely some people are, okay as a final question, can I ask you in non-technical terms just how you think that machine works?

6.knowledge

7.misconceptions

At a rough guess it must enhance the goings-on inside the brain to see if you have had a bleed ..see if there is anything going on ..tumours maybe and magnify it like into a picture and then sent to the consultant to be reported. I presume it uses radioactive..ehm not radioactive what is the word..radio something.

I. Yeh they use radio frequency waves for the MR scanner this uses x-rays

Oh I have mixed them up again ((laughter))

I. No problem you know more than most let me reassure you, thank you very much indeed.

CTFEM7

I. Could I have your age for the tape please?

Ehm... 81

..1.1 age

I. Was that your first C.T scan?

No I had one ehm..about 18 months ago

..1.2 previous scan

I. Exactly the same thing was it?

Yeh, it was it was here yes

I. Did you have any problems with that scan?

Do you mean with going into the scanner?

I. Yes

No I haven't

I. Can you tell me then what you were expecting to happen, maybe the first time since you have had one before?

Well ehm I didn't know what was going to happen the doctor suggested that I had a scan ehm, I didn't know what it was for or anything

I. Did you get some information beforehand something to read or have it explained?

No the doctor just said that I was going for a scan and that was it really. I mean, I didn't know what was happening, particularly the first time. I obviously had a better idea this second time for the scan I have just had.

5.information

I. So were you more comfortable this time since you knew what was going on?

Well, no not really, because I thought I had a ehm .. ((long pause)) a stroke ((very emotional expression)). That's what I thought.

4.feelings

I. Could you tell me what you were thinking about while you were having your scan?

I was thinking about nothing really, ((laughs)) no. no.. I was just waiting for the results really I didn't think of anything in particular at all.

10.reaction in scan

I. Okay were you worried in any way about anything?

Well I didn't know what to think because I didn't know to be honest. I didn't know what a scan was, I had no idea. So when the doctor suggested it, I mean of course you take their word for it don't you, you accept it. But I couldn't tell you what I was thinking about but I was bothered yes I was. I was bothered because I guessed that there was something wrong. I wasn't very keen on the machinery either, I don't like it coming on and off but I got used to it eventually I .. I got there.

10.reaction in scan

6.knowledge

4.feelings

4.feelings

I. You said that it kept coming on and off, what do you mean by that?

It moves, it moves doesn't it?

I. Yes it does

It moves yes it does, I wasn't keen on that really

I. So what did you think was going to happen then?

Ehm I thought I was going to fall, that's what I felt because it was moving and there was no one else in the room.

6.knowledge

4.feelings

I. Can you think of anything else that the experience might be similar to, anything at all?

No, I mean I didn't like the machine, you know and I had that feeling that I was going to fall, it was the same feeling that I had before. I was certainly glad when I was out of it. It was just the movement and the feeling of falling.

14.analogies

I. So if someone in your family was coming along now to have a C.T scan how would you explain it to them?

Ehm I should say that the feeling was one of being in a tunnel, that's the only way I can

13.your explanation

7.misconceptions

5.Information

I. Were you given any information on the ward or anything?

No ehm the doctor came to see me just before I came down, he said I was going down for a scan.

..description

21. Moulding Preconceptions

15.Communication

I. Did he give you anything to read or tell you about it?

No, no he didn't say anything really.

I. Could you tell me what your thoughts were then, when you went into the scanner ?

I don't know now, she (radiographer) asked me if I had got false teeth, I have partial ones, but she said that would be all right. I did also say that I had cataracts and would that affect it, but she said no it would be okay. (points to face several times)

I. So what were you thinking about in the scanner then?

Well all sorts of things really, I closed my eyes and...

I. Why did you close your eyes?

I don't know, I have no idea why I closed my eyes. I just thought while I am lying here I must close my eyes.

I. Why though, were you worried or?

No, I wasn't worried I just closed them.

I. Anything else that you were thinking about in the scanner?

You know I don't know what I was thinking, I just thought it was a lot better than I thought it would be, that's one of the things I was thinking, you know. I felt quite at ease then, no problem at all. I usually do as I am told anyway (laughs).

I. Okay, so can you think of anything at all that might be similar to that experience, you mentioned the aeroplane before, is it similar or anything else however bizarre?

I don't know really, I can remember thinking in the aeroplane why do you worry in the first place, you know, but the doctor had given me tablets for that. But with that, I don't know, it wasn't that bad I cannot think at all.

I. Thank you, if say someone in your family was coming along now to have one of these scans done, how would you explain it to them?

I would say don't worry, you just lie down and they will push you in and you just have to lie very still, that's what I would say.

I. In your own words, obviously I don't expect any technical details; do you know how that scanner works?

No idea whatever; only that it takes pictures of your head or whatever part, I don't know really.

I. Do you think it uses x-rays or not?

...I suppose it could use x-rays, I don't know I've had quite a few x-rays. I could have asked my granddaughter what was going to happen; she would have told me she is radiographer.

I. Oh really where does she work?

In another hospital x-ray there, never thought to ask her.

I. Do you think asking her might have helped at all?

I don't really know, I am not sure.

I. Is there anything that we could do to make the whole process better?

Well for me I don't think it would make much difference because I accept it

23. Self
 11.recommendations
 2.concerns
 ..description
 21. Moulding Preconceptions
 3.expectations
 23. Self
 9.other radiology

whatever it is. If I have to have it done I have to have it done. Perhaps something to put you at your ease but I wasn't worried about it, only that I thought it was a black hole or something when I have seen pictures, I was sure it was a black hole but it wasn't. You see I didn't worry about it or get upset about it, but I just kept thinking that I didn't want to go in that (scanner).

I. Have you had any other scans an M.R.I scanner or anything?

Well a few years, I can't remember the details or anything because I collapsed, but I had to have one of those things on my head. (unsure what this was).

I. Have you had any other x-rays?

No oh just my arm, I broke my elbow once, I had an x-ray on that then but I can't remember anything about it now.

I. Okay, that's fine thank you very much indeed.

CTFEM9(2A)

..1.1 age ☐

Age: 47

..1.2 previous scan ☐

I. You have just had a C.T scan now, was that your first scan?

Ehm, I've had a scan on my sinuses a couple of years ago

..description ☐

I. Was that the same thing a C.T do you know?

It was a big round circle sort of thing that went around yes (assume it was C.T)

18.Symbolic Significance ☐

I. The first thing I am going to do is to show you a picture: I would like you to tell me the very first

thought that comes into your mind please (shows C.T picture)

Washer

3.expectations
7.misconceptions ☐

I. Okay, can you tell me what you were expecting to happen today?

Ehm.. I thought I was going through like, go in one end and come out the other type of thing, I sort of thought

you would go right into like, if you know what I mean. Even though it was only my arms it's awkward, if you know what I mean.

2.concerns ☐

..description
3.expectations ☐

I. So who told you that you were having a scan in the first place then?

Well the doctor here in the hospital, he said that they could see into the bones whereas normal type x-rays can only see the outside of the bones, so if there is any bits of bone floating about or anything like that they will see it.

5.information ☐

I. Did anyone else mention it to you, did you get any more information?

No ehm not really no, oh a sheet of paper telling me yes, I did.

I. Did you find that useful?

Yes, I did.

12.satisfaction ☐

I. So you were quite well prepared for what was going to happen then?

Oh yeah

18.Symbolic Significance ☐

I. Okay you went into the room, what were your first reactions when you went into the room?

4.feelings ☐

...I don't know really, I was all right about it like. I wasn't scared or anything like that

20. Perceptions of the radiographers ☐

I. Good, okay, so you were given an explanation in the room, did you understand that?

Yes I did, I knew what I was getting done sort of thing yeah.

23. Self
4.feelings ☐

I. Can you remember what you were thinking of in the scanner?

Nothing really I was just a bit uncomfortable and my arms were shaking a bit being above me head and I was struggling to keep in that position sort of thing. I was thinking how long it was going to take and things like that yeah. I know that they said it wouldn't take too long anyway so it was just going to be a bit awkward to hold the position.

14.analogies ☐

I. Was the whole experience similar to anything else that you can think of in life, however bizarre?

No not really (laughs) no it wasn't, I suppose that if you were comfortable you could just drift off and everything but because I was in such a position I couldn't do that like.

12.satisfaction ☐

I. Fair enough, so you were just thinking about keeping still and how long it was going to be?

Yeah that's right

CT2FEM10(2A)

..1.1age

Age: 69

..1.2 previous scan

I. The scan that you have just had, was that your first scan?
No, I've have a few in the hospital

I. All C.T scans or not?

Oh all sorts and one down below (assume a trans-vaginal scan)

18.Symbolic Significance

I. Okay I'm going to show you a picture of something now and I would like you to tell me the very first thought or word that comes into your mind (show picture of C.T scanner)
Ehm... a porthole

I. Thank you, you've just had that scan, can you tell me what you were expecting to happen?

Well my husband came the other night and told me that he'd had one exactly the same so he told me about it.

3.expectations
21. Moulding Preconceptions

I. Can you tell me what he said to you?

He said, "There is nothing to it" but he didn't have this done (laughs). I had the thing pushed up my bum (laughs) (referring to barium in the rectum and vagina). Oh that wasn't nice and I've got piles and oh it was painful.

21. Moulding Preconceptions
22.Stories
2.concerns

I. But the actual scan itself, how was that?

Oh it was good really, isn't it wonderful?

I. Yes

Where did that come from?

I. What the scanner?

Ehm.. Germany I think, yes Germany.
Element of confusion here

I. So from what your husband told you, what were you expecting to happen?

Well I knew I was to lie on a table and go through the machine that was about it really.

18.Symbolic Significance
3.expectations
..description

I. Did you understand the instructions that you were given in the room?

Well the nurses (radiographers) said, "That you go through the machine" so I understood that yes.

12.satisfaction
..description

I. Okay so can you tell me then what you were thinking about when you were lying in that machine?

I was praying that I hope this stuff doesn't come out of my bottom (laughs); I was worried (laughs).

23. Self
2.concerns

I. Apart from that, did you have any other thoughts?

It was all right, the girls said they would be close by and I felt someone's arm touch me a bit. I mean I couldn't see or anything.

Perceptions of the radiographers
15.Communication
12.satisfaction

I. Were you okay with that?

Yes it was okay really

12.satisfaction

I. So that whole process was it similar to anything else that you have experienced in everyday life, however strange or bizarre?

No nothing.

14.analogies

I. If you now going to explain this to a member of your family, what would you

13.your explanation

12.satisfaction
15.Communication
19. Isolation

I. Did you know where the radiographers had gone to?
No, I couldn't see nothing, I didn't know where they had gone. She said she'd be back but I didn't know where she went.

12.satisfaction
13.your explanation
12.satisfaction
4.feelings

I. Okay, so if you were going to explain that scan to say someone else in your family, what would you say?
I would just say that there is nothing to worry about, you know they all tell you what is going on and to lie down, I mean you're not scared or nothing and it's over quick. So just get on with it really.

6.knowledge

I. Now I don't expect any technical details or anything, but have you any idea how that machine works?
Ehm .. no not really it's just like an x-ray machine but its like radio something (laughs) I really haven't got a clue (laughs)

11.recommendations
12.satisfaction

I. You obviously haven't had a problem in there, but is there anything that we could do that would improve the whole process?
Not really no, I mean everything .. you know they tell you what's going on and everything, get you in the right position and I suppose there is not a lot more they can really do is there?

I. Fine so you were happy with everything overall?
Yeah

12.satisfaction
..description
9.other radiology

I. Have you had many other scans or x-rays?
Well ehm I 've had a few broken bones here and there so I 've had lots of x-rays, straightforward, I've had the one on my sinuses but as I said before that was fine, again a bit uncomfortable because of the way it had to be took like. That was like a wheel that sort of went round you (description of the C.T scanner). But not too bad at all, like.

I. Okay that's fine, thank you very much indeed.

13.your explanation
 Perceptions of the radiographers
 12.satisfaction

say to them?
 Oh I'd tell them everything and swear words (laughs) I mean she was very nice the lady, I don't know her name but she was very nice, very gentle (laughs) I think she felt sorry for me and that's what you need.
 I'd tell them everything and don't worry about it really as long as they don't have this done (pointing to her bottom) you know what I mean?

6.knowledge
 7.misconceptions

I. I don't require any technical terms here but have you any idea how that machine works, or what it does?
 It goes bump,bump,bump and moves towards you and I thought I am going backwards or is that machine coming towards me, you know what I mean, something is moving.

11.recommendations
 12.satisfaction
 Perceptions of the radiographers

I. So is there anything that we could then to improve the whole process for the patient.
 I don't think so; they are all very nice doctors and nurses (radiographers) all very nice. Very nice people

This lady appeared a little confused and did not always answer the question. This proved to be a difficult interview.

CT2AFEM11
Age: 23

..1.1age

..1.2 previous scan

I. You have just had a CT scan, was that the first one that you have had?
Yeah

18.Symbolic Significance

I. Now I am going to show you a picture of something I would like you to tell me the very first word that comes into your mind [show photograph of CT scanner]
Round hole

3.expectations

I. Okay that's fine, can you tell me then what were you expecting to happen?

Ehm...pretty much what did happen but quicker [this interviewee was a staff nurse in a children's hospital and therefore would have had a good idea of what to expect].

5.information
3.expectations

I. Were you given any information beforehand?

No, I had seen an MRI scan but not a CT but I knew it would be that kind of layout.

3.expectations
..description
18.Symbolic Significance
21. Moulding Preconceptions

I. How did you know that?

I've seen one on TV I think, it's just like a picture of it that I have in my head, oh and we have a children's play CT scanner on the ward to show the kids just what is going to happen.

5.information

I. Oh right that sounds very useful. So were you given information to read before your scan?
Yeah, I think I was but I didn't read it ((laughs)).

18.Symbolic Significance
3.expectations

I. So you went into the room and saw the scanner, what was your immediate reaction?

It was what I expected

20. Perceptions of the radiographers
15.Communication

I. Did you understand everything that was said to you in the room?

Oh yeah, no problem it was clear.

12.satisfaction
4.feelings
2.concerns
15.Communication

I. Can you remember what you were thinking about while having the scan?

Hurry up before I fall asleep ((laughs))....and then it stopped for a bit and I could see them looking at the screen [through the window] and I was thinking oh god they have probably found something on it.

20. Perceptions of the radiographers

23. Self

I. So you concerned about what the radiographers were doing and saying about your scan?

Mmm...I think the other one was learning, so maybe they were just going through the process, but you just feel as if they are talking about you and your scan. They [radiographers] said, 'Right we are just going to do another one' and you are left thinking, well why are doing to do another one but....

19. Isolation
15.Communication

I. Did they tell you they were going to leave the room?

No, but I knew they would anyway and I could see them.

14.analogies

I. The experience of going in there and lying in the scanner, is it analogous to anything else in life, however strange or bizarre?
((long pause)) similar to having a normal x-ray really.

I. So if you were to explain the whole procedure now, to say a member of your family, what would you say to them?

13.your explanation
..description

That you would go in there [scanner] that they[radiographers] would explain that you were going to lie down and there is like a dome thing that you go through. I would say that the whole of your body goes through and they just take a series of photographs.

6.knowledge

I. Have you any idea how the equipment works or what it does?
No, haven't a clue

2.concerns
18.Symbolic Significance
11.recommendations
Perceptions of the radiographers
23. Self

I. Okay, you are a staff nurse not a radiographer, have you any recommendations that may help to improve the whole experience for future patients?
Maybe to have someone in the room to look and make sure you are okay, it could be quite frightening for some people on their own. Also, if someone could tell you what is going on, they are looking inside my body but I can't see it and I'm left wondering what is going on.

I. Have you had any other x-rays at all?
Hundreds, I 've broken nearly every bone in my body ((laughs)).

9.other radiology
4.feelings
2.concerns

I. Did you find any of those procedures problematic?
No not really, I think I am so used to them. I had a lot of x-rays when I was young and over the last couple of years I have had a lot of chest x-rays. I had one done on my sinuses a couple of weeks ago that I had never experienced before, that was unpleasant with my face pressed against the board. It's often difficult to stay still, hold your breath and keep in the position.

CTFEM12(2)

..1.1age □

Age : 62

..1.2 previous scan □

I. You have just had a CT scan, was that your first CT scan?
Yes

I. Okay, have you had any other type of scan MR scan or anything?
No, that's it

I. I am going to show you a picture now and I would like you to tell me what the very first word is that comes into your mind, very first thought.
Ehm...I am only partially sighted but I have my glasses..

18.Symbolic Significance □

I. Oh I am sorry can you see it now?
Yes, ehm..toilet ((laughs))

21. Moulding Preconceptions 3.expectations □ □

I. So can you tell me what you were expecting to happen today? About what I expected really because my husband has had one you see.

I. Right so your husband has had a CT scan?
A CT scan and one of the other scans

I. Can you tell me what he said to you?
Well he is dead now...

I. I am sorry, you do not have to tell me if you prefer?
No it's fine, he said that you lie down, I knew the CT scanner is not the tunnel one; just that the machine goes over your head, the circular thing like a donought that goes over which ever area they are scanning.

..description 6.knowledge 14.analogies □ □ □

20. Perceptions of the radiographers □

I. Okay, so you were given an explanation when you went into the room, did you understand everything?
It was very clear yes.

17.Coping Strategies □

I. Can you tell me then the story of your scan, what were your thoughts in there, what were you thinking about lying in the scanner?
I was counting, it's the same thing that I do at the dentist, anything I am not very keen on, I count.

17.Coping Strategies □

I. Why do you think you do that?
Well it helps me keep still and concentrate my mind so that I don't feel as if my nose is itching or feel as if I want to cough because I have a chest condition. It somehow just concentrates my mind and the time seems to pass much quicker, it's useful when I don't really want to think about what is going on. You are more likely to be still when you think about something, rather than being aware of what is happening to you.

17.Coping Strategies 10.reaction in scan □ □

I. Do you count down or up, what is your method?
I count in minutes, I start at sixty and then count down, I do that for each minute so that I know how long I have been in there. It seemed to be over in no time at all doing that mmm. If was much longer I would probably start singing, I don't know why I sing hymns..it's probably the only songs that I know right the way through.

I. Okay, that's good, that scan that you have had in there today is it similar to anything else in life

14.analogies

however strange or bizarre?

I can only imagine it is like the dentist, do you mean anything else medical?

17.Coping Strategies
15.Communication
16.Control

I. Anything at all

I always think that nothing is worse than one second at a time, nothing how awful it maybe, that means that you never have to bear more than one second at a time, I suppose that is why I count the seconds away. It stops you thinking of other things especially in the machine when you are not sure what is going on.

17.Coping Strategies

I. Did you at any time think about other things, maybe in the past or..?

No I was focussed totally on counting... a little worried about coughing in case I moved.

13.your explanation

I. If you were to describe this scan to another member of you family what would you say to them?

For a start you can't see anything because you have your eyes shut the whole time, she [radiographer] said 'you will be aware of the table tilting and you will be aware of this, that and the other' but I was aware of nothing really just the sound of the wheering of the machine, she said 'just lie there as comfortable as you can and it is over very quickly.' I felt no pain or sensations like a normal x-ray.

Perceptions of the radiographers

Everything is explained to you so that you do not have to worry in anyway, everything is explained to you as you go along.

4.feelings
12.satisfaction

20. Perceptions of the radiographers

I. So why do think you shut your eyes?

Well I was lying on my stomach to start with and I couldn't see anything anyway, just the red thing [unkown] with my head on one thing and my chin on another. I mean there was nothing to see anyway, if I had my eyes open I wouldn't have seen anything.

15.Communication
17.Coping Strategies

I. Did you know where the radiographers were?

Ehm I think, I don't know really, I don't know where they went when they left me, to the side I think ((points towards scan room door)).. I knew they weren't in the room.

Perceptions of the radiographers

15.Communication

I. In your own words, have you any idea how that machine works, what is does?

Not really no, it's the sound ...uhm I have only had the ultrasound, so I know that it is not the same as that, I'm not sure really it must take like slices through the body and be able to do a form of 3D imaging I suppose of the body parts. I think a normal x-ray is in just one direction, flatter and not as precise.

6.knowledge

I. If you were to describe this scan to say a member of your family, what would you say to them?

I would say that you just lie on a table, everything is explained to you, it's not a worry and they [radiographers] take you through it step by step, so you don't have to worry or remember anything, just relax.

13.your explanation

12.satisfaction

I. Have you any recommendations that would help patients attending for a scan in the future?

Information beforehand, but I had previous knowledge,

11.recommendations

11.recommendations

..i think the leaflet that they send you; you won't have any after effects and it is reasonably quick.

9.other radiology
23. Self
2.concerns

I. You have had ultrasound, but have you had any other tests in x-ray?

I've had a barium enema, that was absolutely awful, the worst test that I have ever experienced. It was uncomfortable and embarrassing.

23. Self
25. Technological association
2.concerns

I. Was the machine a problem?

Well it was uncomfortable and the thing [explorator] was pressing against me the whole time. Oh and when the bed thing tilted up I thought I was going to fall off. But to be honest the whole thing was horrible, anything they could do to improve that would be great.

I. Okay, thank you very much for your time.

CTMALE1

Age 70

1.1 age

I. First of all thanks for agreeing to have this done. Have you had a scan before?

No.

I. This is your first experience of a scan is it?

Yes

I. Do you know what type of scan you went down for?

I don't, do i know? no not really.

I. Do you know what it was for?

No

I. Can you tell me what you were actually expecting when you went down there?

Well to be honest I've only seen photographs of scans where you go into a... tunnel - where I expected to be in, to be honest. I didn't realise I'd be going in one like the one I did today where it was going round. It was very interesting to be honest.

I. Right - so were you at all apprehensive?

No, the girls were lovely.

I. Good that's nice to hear certainly. So, were you given any information before you went down?

No, not really.

I. Did anyone give you anything to read?

No, no nothing at all no((raised arms in concern))

I. Do you think that might have been useful?

I think it might have been, yes I didn't know how long I would be in there for - I had to wait outside quite a long time before going in - I didn't really know what to expect to be honest. It didn't worry me, you know these things have got to come haven't they?

I. Yes

I'm a farmer you know, I've done the same thing myself, I'm with animals all the time.

I. What was your experience when you actually got down there, how did you find the process when you got down there?

Into the room? All right yes, no problem at all.

I. Was everything explained?

Yes, everything was explained, fair play, they told me what was going on you know. Yes it was very easy, I thought it

1.2 previous scan

3. expectations
5. information

4. misconceptions
3. expectations
5. information

4. feelings

2. concerns
5. information

4. feelings

would have been longer actually.

I.How long were you in there, do you remember?

About over five minutes it wasn't long. I don't know exactly I didn't look at the time

I.OK

Very very easy.

I.In what way was it very easy?

Well, it didn't worry me at all, I wasn't frightened, it was very pleasant to be honest

I.You just had to lie there ?

Yes, they push you in very slowly as far as I could gather, I don't know.((laughter)) sounded like it was 'ticking in yer.'

I.When you saw the machine, when you saw it wasn't a big tunnel, was that better?

It didn't worry me at all.

I.OK, did you have an injection or anything to drink during the scan?

No

I.Is there anything, I know you weren't particularly upset by any of the process, but do you think there was anything in that room with the machine, that could intimidate people, that could make people fearful.

No I don't think so; I never noticed anything to be honest, I just went into the room to have it done, the girls ((radiographers)) were lovely, they were super.

I.Good that's very nice to hear. Obviously I don't expect you to know the technicalities of what goes on in there, but very simply, in your own words, do you know what that scanner does any idea?

Well, I think it takes out the cells in your head.. brains ...- I don't really know to be honest but there are leaflets there to tell you aren't there? Apparently in the hospital. A lady had one on the table and she said 'Do you want to read that?' but of course I went then.

I.Was this the lady outside the CT?

No, a patient I think, a patient on the ward.

I.Oh right! so you were given something before you went?

No, the nurse didn't give me anything, but like this one here [points to the notice board].

I.Oh I see, general information, so one of the other patients had picked that up.

That's right, the chest, I had a chest x ray as well

4.feelings

10.reaction in scan

6.knowledge

5.Information

I.That`s straightforward

Yes I`ve had one before actually. I`ve never had a scan before but I wouldn`t be frightened to go again.

I.The idea behind this is just to see how people feel, not everybody feels as comfortable as you.

Don`t they? Really

I.No, particularly with the long tunnel.

Oh I was wondering about that myself, its a little bit claustrophobic, I was thinking that myself , it did cross my mind before I went down there. I did worry a bit before I went down there ..but no that was nice. Yes that was fine

5.information

I.There`s another scan we do, called the MR scan, that uses magnets and things, that is more of a long tunnel.

Oh is it .I do find this technology interesting

I.That can give problems, nevertheless its nice to know you didn`t have any problems yourself. Anyway we`ll get you back to the ward now.

CTMALE2

age 62

..1.1age

Interviewer I: Thanks for coming along for this interview this morning, may I ask you; is this the first C.T scan you have had?

..1.2 previous scan

No the second, oh hang on the third sorry.

I. Ok, when were the others?

..1.2 previous scan

Ehm.. one was a mobile the second one was in another hospital and obviously this is the third one.

I. Fine, I am interested in your experiences of the whole scan, what did you expect would happen?

7.misconceptions

3.expectations

I just thought it was a long tube you went through and it just scanned your body like, I imagined that it was like a big polo ((nervous laugh))...It wasn't as bad as I thought it would be.

I. Can you perhaps expand a little on that you said you thought it was a long tube?

I thought it was eh, I thought it was a cancer,.. you know one of them cancer things, you know the cancer scans, it's not it's just well, a polo thing and you put your head in there and ...it was alright, better than I thought.

I. You used the word cancer then; did you think it was a cancer scanner?

Yeah ((nodding)) I did.

I. Had you spoken to anyone before about it?

No I hadn't. I never had the chance.

I. Do you know why you needed to have the scan, in your own words?

Yeah to find out what's wrong with my head.

I. Ok fine you have been having problems, so what did it actually feel like, perhaps your first experience is the most interesting one when you went in there?

Well, I didn't know what to expect I wasn't told beforehand, they said what they were going to look for and that it would just scan my head.

I. Were you given any information leaflets, written details before the scan?

No ((shakes head))

I. For any of the scans?

No none

..2.1 problems
7.misconceptions
3.expectations

5.information

2.concerns
5.information
..2.1 problems

2.concerns
5.information
..2.1 problems

I. Not at Neurological centre?

No nothing

I. So who has explained it to you then?

The doctors that are , you know doing it, when I got in there they told me what they were doing, this and that. They said just lie there look at the camera and keep your head straight.

I. Did you find that to be a strange experience lying there remote from the staff?

No not really, it was all right.

I. So presumably you would be more than happy to have another one then?

Yeah, ((nods head))

I. Fine, have you any idea what this scanner actually does? Obviously I do not expect you to know anything technical.

No no idea.

I. Would you know how it might differ from a normal x-ray for example?

Well, /ehm/, /ehm/ you have taken about 15 different pictures of me in my head at different angles. I don't know, I've just seen pictures, 15 different pictures of your head ...((nervous laugh)).

I. Fine, if say a friend came along to you now and asked what was involved in a C.T. scan what would you say, right from the beginning?

I'd just say it was easy, a piece of cake just a piece of cake, I would say just lie there and keep your head straight. Just think you are having an ordinary x-ray shut your eyes, it's a bit different with the polo but just relax, it's a piece of cake.

I. Thank – you for your time.

10.reaction in scan

4.feelings

12.satisfaction

6.knowledge

11.recommendations

CTMALE3

Age 68

..1.1age

I. Thank you for agreeing to have this interview, firstly may I ask you is this your first C.T. scan?

..1.2 previous scan

Yeh,.. /ehm/ the only other things I have had .../ehm/ an ultrasound and an ordinary X-ray.

3.expectations

I. Can you tell me what you expected would happen?

Well it's a bit of a mystery I didn't know, nobody knows what's the matter with me you see, they cannot find out exactly why I have had pains and things so I am hoping from the scan to tell whether it's stones in the.. /ehm/ in the /ehm/ gallbladder or a bit of a blockage in the eh they put a stent you see. I went yellow and since they put the stent in I have drunk lots of water and well, it's nearly all gone now. I just hope that they will be able to put their finger on the cause of all this.

I. In terms of the actual procedure has anyone explained to you what would happen?

No, not at all, not on the ward

I. So what did you expect

I had no idea really [nervous laugh]

5.Information

I. From what you have seen on the television or perhaps friends may have told you, what did you think might happen?

Oh just that people have said you lie on a table and this big thing goes around you, but I mean apart from that I just didn't know.

4.feelings

I. Were you in any way apprehensive about the scan?

No, I was just glad to have it done really, I am hoping that the doctor will come in the morning and say, well these are the results of the scan this is what is the matter with you and this is what we are going to do with you.

12.satisfaction

I. So just to clear that up, you have not been given any information about the scan on the ward, nothing written down or even told about it?

..description

No, nothing at all I had to ask how long it takes /ehm/ ...some said twenty minutes some said.. /ehm/ over an hour this is the nurses on the ward yes?

5.Information

I. I see

But apart from that I didn't know anything about it all. I think though that people should know how long the scan is, you know they should know that they are not expected to eat or drink before the scan and for how long. I have had nothing to eat or drink today, at all, until now she ((radiographer)) said drink two cups of water but it goes down into a bubble, it's coming up all the time you know burping and everything it's not pleasant. I have a job to keep it down at times.

I. So you have had nothing to eat or drink all day long?

No, I don't eat much anyway, but to get rid of the /ehm/..jaundice colour I need a lot of water with a little food at meal times. I mean the doctor came along this morning at 9 am and said the scan has been arranged for 3pm "nothing to eat or nothing to drink" and the

nurse wrote it on the board. Whether there is a set time before the scan or not I don't know, nobody told me.

I Can you tell me what the actual scan was like?

Yes I was quite interesting really eh they [radiographers] were very good at explaining what they were going to do and ...eh well there is nothing nasty about the experience really it's just my hope that they will come to a conclusion soon. I was a bit uncomfortable only because I had to have my arms raised all that time, they really ached, but apart from that it was not uncomfortable at all.

I. So if someone came along and asked you to explain what it was all about what would you say to them?

...It's no problem, the girls ((radiographers)) in there were very good everybody has different ideas about the thing I suppose but myself I knew it had to be done and I was glad that it had been done. It's not painful or anything like that so yeah it's okay.

I. Can you explain in your own words what you think the scanner does?

...It takes /ehm/ pictures in small dimensions to try and find out what the blockage is that's inside ..as far as I know.

I. Would you know how it might differ from a normal x-ray perhaps?

As far as I can make out it's showing the picture this way ((points to a transverse line across the chest)) but obviously ultrasound shows it that way ((points to a longitudinal line down the body)). That's about it I think.

I. Okay I will leave it there, I will let you get back up to the ward, thank-you very much indeed. Thank you.

CTMALE4

..1.1age

Age 65

I. First of all thank you for agreeing to have this interview, may I please have your age

Just 65 this week

I. Can I ask you is this the first C.T scan you have had?

No the second, I had one in 1934 and One in 1970 where they put this thing over my head, although I am not quite sure of the dates.

I. They would have been normal x-rays I suspect certainly the one in the 1930's.

Oh yeah I see I have had one of this scans just like the one in there [C.T suite] about 5 years ago, but not here it was in another hospital.

I. Can you tell me what you thought was going to happen?

Well this morning nothing, because I knew what was going to happen, you see I am the sort of person that closes in very easily, I panic very quickly...because you know it's very frightening when you first go into the room you see that tube. It's that tube if you could improve that ,make it quicker or something I don't know.

I. In what way did that worry you can you explain?

It's people that suffer from claustrophobia it's quite frightening it worried me, if they made it bigger on the outside or even wider and explain to the people what they are going to do before you go into it. ..Instead of just taking them in, not just put them in that tunnel tell them exactly what is going to happen and you know that thing that goes around [x-ray tube] just tell them about that, I mean I've had one of these before but I was still frightened.

I. Before you had the scan did anyone give you any information?

No, no not at all they wouldn't tell me the truth, now this time I want to know the truth.

I. The truth in terms of having the scan or the actual results?

The results I want the truth.

I.I am not here to enter into your medical history or results today that is something you perhaps need to discuss with the doctors on the ward

Okay, I see but the information has always gone to my doctor and I haven't been told any information.

I. So what were you expecting to happen when you came down?

Just panic sheer panic it's when that thing goes around and they [radiographers] tell you to close your eyes and look up and you see that thing go around [x-ray tube] I was expecting that thing to come, well you know, down on top of me the first time I thought it was going to hit my head and that worried me because with that claustrophobia you don't know where you are.

I. Do you normally suffer from claustrophobia?

..1.2 previous scan
7.misconceptions

2.concerns
4.feelings
3.expectations

7.misconceptions
4.feelings

11.recommendations
3.expectations
..2.1 problems

4.feelings

5.information

4.feelings

7.misconceptions
..2.1 problems
10.reaction in scan
3.expectations
4.feelings

...2.1 problems
 10.reaction in scan
 3.expectations
 1.recommendations
 10.reaction in scan
 4.feelings
 3.expectations
 2.concerns

No, I don't normally, but I'll tell you what, if you put someone in there they could have a heart attack. You wouldn't save them, you wouldn't. It's just so quick I think what you have to do is to talk them first, not take them straight in. Talk to them first and then take them into the scanner not just take them into the scanner. It's no good talking to them after, that's too late. I mean I suffer with my heart I've had two heart attacks, if that had been my first time in there this morning I could have had another I was so frightened.

I. Hopefully not, if someone else in the family were coming along to have a scan how would you explain it to them?

13.your explanation

I would just say not to worry, it isn't as bad as it looks, and really there is nothing much to it and put yourself in their hands. The machinery can put you off, but tell them [family members] not to worry that's just part of the set up and there is nothing to it really. I mean I know a young lad who came off his motorbike, had the handlebars embedded in his head and well it [C.T. scanner] saved his life. Without the scan he would not be here today.

I. That's nice to hear, can I ask you in very simple terms how you think that the scanner works?

6.knowledge

Just takes pictures as far as I know, it just scans your head as far as I know it goes all around your head and the back of your head, that's all I know.

I. Ok, that's fine finally if we are to make recommendations for the future for patients having these scans what would you suggest?

11.recommendations

Definitely by talking to the patient before the scan, and that's it really, talk and explain what is going to happen and the truth when they come out, that's all we ask for the truth.

I. Thank you very much indeed

CTMALE5
AGE 58

..1.1age

I. May I ask have you had previous C.T scans?

..1.2 previous scan

Yeh I have had 4 or 5 between here several other hospitals.

I. Can you tell me what you expected was going to happen, perhaps you need to think back to the first few that you had?

4.feelings
3.expectations

Nothing in particular, certainly nothing to be afraid of or worry about, they were just going to pass a sectional camera above my head so I felt okay.

I. Were you given any information beforehand?

5.information
4.feelings
7.misconceptions
..description

Ehm, no not particularly.. no no they[nurses] said that they were going to inject me with some radium that made me feel a bit apprehensive that was the only misgiving that I might have had for a few seconds like.

I. How did you feel going into the scan room?

I had no worries about it at all, I just imagined that it was well..just like another x-ray that is all.

I. Was everything explained to you within the room?

Oh yes, I just took it step by step it was fine.

I. Is there anything about this particular scan that you think might worry patients at all?

11.recommendations

Ehm, well I suppose a couple of points .well one in particular, I think one of anxiety, you have to hold your breath for a long time for the camera and your panicing in case you cannot hold your breath for long enough while they take the slice or the photograph or whatever. That was a little bit difficult particularly in the beginning.

I. If for instance someone in the family came along to have one of these scans now how would you explain it to them?

Well my sister had one up in Scotland a couple of weeks ago; she was getting all worked up about it.

I. What in particular was she worried about?

2.concerns

Well she didn't know anything about it she just knew it was a sectional scan a C.T scan' or just what they might find, it was a combination of not knowing about what was going to happen as well as what they might find. She is five years older than me and you know technology is a new thing. Even the remote control for the television is high tech and difficult, but this is it with the older generation she really was worried.

I. So what did you say to her then?

13.your explanation

6.knowledge

I just said that it is no worse than an x-ray lie back relax and let them get on with it and I think that she felt a lot better at the end of the day.

I. In very simple terms, obviously I do not expect you to

know any technical details, but do you know what that machine does?

I believe that it takes sectional ultrasound photographs if you like; that's the impression that I get but nobody has explained it to me like. Obviously, I have seen scans of myself like and they show some thickening areas around my heart and lungs and highlights these, so yes, I would imagine that it takes the scans in cross section. In that way they operate the camera it just makes common sense really. It's just the nature of how it does it well I don't know any detail on that. It's definitely ultrasonic I know that, or even microwave maybe?

6.knowledge

7.misconceptions

I. It's actually x-rays

Oh is it? I never knew that

I. Finally, I am trying to make some recommendations out of this study for future patients is there anything you think we can do to improve the whole procedure?

Only once or twice well .. the last time I came down here I had to wait in recovery, ehm it was quite draughty and well you know uncomfortable. I was sat there for too long waiting for the porter to come and take me back but that would be my only complaint.

11.recommendations

CTMALE6

AGE 54

..1.1age

I. Can I ask was that your first C.T scan?

..1.2 previous scan

No, it was my second; the first one was ehm some 12 months ago

I. Perhaps if you can remember back that far, what did you expect was going to happen?

3.expectations

I didn't know I had no idea, all I knew was that it was an x-ray and it was going to be on my head, that is all I knew. That was as an outpatient ..I mean I did get some information beforehand, in the post you know, but well I didn't take it all in because there were such a lot of problems going on at the time you know. I had just had a heart bypass and I wasn't feeling too well anyway, so I had an awful lot of problems, so I just felt they are trying one other test to see if they can narrow down just what is going on inside. This time was different I understood it more because I have been having fits so they said that first of all they wanted to do this C.T scan to see what is going on to see if it is well..anything happening within my brain which is causing these fits, so yes I did understand it more this time.

I. So someone explained it to you before you came down?

Yes

5.information

I. Did you have any written information before you came down?

No nothing in writing

I. How did you actually find the scan?

4.feelings
10.reaction in scan

Well I hate lying on my back flat and ehm, when they strapped my head in I hated that too, that really was not very nice, I didn't say anything but it did scare me a bit, but apart from that it was okay. I just felt very shaky not especially nervous, although I was anxious, perhaps it is part of this complaint I do not know.

I. So the only real problem was when your head was strapped down?

10.reaction in scan

Yeh, I was very uncomfortable, I just wanted to get up, I felt as though I wanted to scream and sit up((long pause)) get out of the room, but I managed to control myself.

I. Would you have know what to do if you needed help or you wanted to get out of the scanner?

10.reaction in scan
2.concerns

No I would just had to have yelled out; although I didn't know whether there was anyone in the room or not. I saw a big glass screen with I think people behind it, but I didn't realise that there was nobody in the actual room.

I. Did the radiographer in the scan room explain to you what was going to happen?

No not really no and I was worried.

I. If someone else, in say your family ,was coming along to have one of these scans what would you say to them how would you advise them?

13.your explanation

Well, I would tell them not to worry like I do, it really is nothing to worry about, I would tell them that you go into this room and lie on a bed, it's not nice when they

3 your explanation

strap your head but there is not much that you can do about it. You then go through this long straight tube and well ..that it is really. I would describe it as being okay, it is nothing to sit and worry about.

6.knowledge

I. Obviously I do not expect any technical details, can you tell me how that machine works?

No, all I know is that it looks at your brain to see if it is functioning properly, I really do not know anything about it at all.

7.recommendations

I. Might you have any suggestions as to how we might be able to improve the whole experience for future patients?

Not really no, unless you could explain a little more about it and what is going to happen that's about all. I mean, even though I had had one, I was still a little bit in the dark about what was going to happen.

7.recommendations

I. Do you think that someone to speak to you might be more useful that something written down?

Yes I think so, you know you just cannot take it all in and,... you don't like to ask do you? It is better if someone can explain, you know in detail, but you haven't got the time to do it I suppose.

I. Thank you very much indeed.

CTMALE7

AGE 65

..1.age

..1.2 previous scan

I. Is this your first C.T. scan?

Yes, yes it is

6.knowledge

I. May I ask you then, what you were expecting to happen?

I am not sure at all; it's all a bit strange I don't know. I mean I've had a body thing an ECG or whatever it's called but because I've never had one before, I didn't know what was coming. This is something that well..ehm I don't know anything about it.

..description

5.information

7.misconceptions

I. Had anyone explained anything about it to you?

Well the lady did [receptionist], she said they lay you on the table and err the thing goes over you and x-rays you. I have had no other information, there maybe something at the foot of the bed, but ehm I didn't see anything. On the ward they just said we are going to do this ECG thing for your blood pressure.

4.feelings

4.feelings

2.concerns

7.misconceptions

10.reaction in scan

5.information

3.expectations

2.concerns

I. Were you worried about it?

Well yes since I didn't know anything about it, I was and when I went in I could see that ring thing [C.T scanner] and I am a bit claustrophobic you see. I assumed that you laid on the bed and a ring about that wide [demonstrates large circle with arms] passes over you, well that was entirely different anyway I gave it a bit of a go but I was getting puffed you know getting on the table and that and I knew that if I panicked I would be in trouble.. so I decided that it was best if I left it.

I. So you didn't have the scan done then?

No I couldn't

I. Why do you think it worried you so much?

I think it was more claustrophobic really and I know you explained it in the room [radiographers] but it doesn't go in. But ehm I just couldn't go through with it, you see when I got on the table I was shaky due to my emphysema and if you don't keep still for these scans then it's a waste of time doing it. I know they are good things but..I mean you know that tunnel thing [C.T scanner] never go near one of them.

10.reaction in scan

4.feelings

2.concerns

I. The MR scanner?

[Nods head in agreement]

No anyway I know what this scan is all about now.

13.your explanation

2.concerns

I. So if someone else in the family were coming along now for one of these scans what would you say to them?

Well it depends, if they were claustrophobic I'd say no, but they would have to find out themselves wouldn't they. I mean the staff here are very good with the patients there is nothing that can be done is there?

2.concerns

..description

5.information

2.concerns

I. Do you think it would have helped to have had more information?

Ehm, yes but if I had had that information about that ring [C.T scanner] I wouldn't have come here in the first place, no it really frightened me. You see there are something's in the hospital like.. I just came in over a month ago for a day for tests and they said they wanted

2.concerns

an arterial blood test ..Ignorant me you see [concerned expression] so he comes, this doctor and he says this might hurt a little bit and put the needle in here [points to a vein in his left arm] well it nearly bloody killed me, so 'I said you're not going to do that again are you?' and he said 'no, no' and they put me on oxygen. Then he came back and tried it again.

11.recommendations

4.feelings

I. What do you think we can do for patients like you in the future?

Explain it further or perhaps bring us down and show us beforehand, but that would be difficult in time and money but might save time. Sitting there waiting makes me nervous and then you go in and that gives you a fright all this fancy equipment and that.

11.recommendations

I. How could we overcome that fear of the equipment do you think?

The only thing I can think of would be to give them a tour or it beforehand.

6.knowledge

I. Now obviously I do not expect any technical details here but have you any idea what that scanner actually does?

Ehm ..it's like a type of x-ray isn't it, but it is very fine magnitude, but that's all I know about it sorry

2.concerns

I. No that's fine, I am sorry that you couldn't go through with it.

Well it's one of those things, if I was to have another of these scans I don't know how I would cope, it depends upon the person really.

2.concerns
9.other radiology

I. So was it the equipment as well as the claustrophobia that caused you the problems?

Yes, but there again I have been for one of those barium meals and there is some equipment in there but that is not as bad as this [C.T.scanner].

I. Okay thanks very much

CTMALE8(2)

..1.1age

I. Could I have your age for the tape please?
83

..1.2 previous scan

I. You have just had a C.T scan, was that your first one?
I had one a long long time ago, I cannot think..it was eh ..(long pause) I should say 5 years ago

I. Are you sure it was a C.T scan?
Yes it was exactly the same thing

18.Symbolic Significance

I. I am about to show you a picture and I would like you to tell me what is the first thing that comes into your head?
A round hole

2.concerns
3.expectations

I. Fine, could you tell me please what you were expecting to happen?
That's difficult eh ...I was uncertain, I was very confused because on Monday night I was in bed lying down, I was listening to radio Merseyside actually, next thing they are are trying to wake me up I hadn't got the foggest idea how I got there or anything, so this is part of that confusion type of thing.

I. I see
I am confused as to what is going on

3.expectations
2.concerns

I. In terms of the scan today what did you expect, when were you told you were having a scan?
Eh oh about half an hour ago, no I expected something like what took place they talked about going into this scanner and I can vaguely remember what it was like before and it turned out to be as I had imagined it to be you know from previous experience.

I. So can you tell then, what were your thoughts and feelings when you went into the scanner?
Silly ones as well?

17.Coping Strategies

I. Yes all of them
Well the pads placed at the side of my head covered my sticking out ears, I am rather conscious of those ((laughs)) . Well it started and I saw the red light flashing so I shut my eyes.

17.Coping Strategies
4.feelings

I. Why did you shut your eyes?
I don't know I thought it may damage them or something, I only have one so I have to be very careful you know. I was just listening to the noise and just thinking about whatever happened to my teeth (lost teeth during admission to hospital) and I kept thinking about how long I might be in. I mean I must be out by Sunday 4pm because ia m getting married, we have both been married for 55 years and we are going to the Marble church to be remarried, so I have to be out by then for sure. I was thinking about all those things, this hasn't marred it at all I thought. I knew that, well they must be doing this for a purpose, for my interests it must have some influence on my outcome.

23. Self

I mean I put my trust in the women in the room, they told me how it was done and everything.

0. Perceptions of the radiographers

I. Did you know who the girls were?
No I don't, nurses aren't they?

20. Perceptions of the radiographers

I. No radiographers
I used to be in the army, the eighth army, a desert rat you know , I did think about that, I was out there for five and half years, just over, that's where I had my eye blown out by a hand-grenade. They shipped me down to the hospital on the Suez canal then back from there into Cairo and once you got back up on your feet again you back again and that. Those were all the things going through my mind I thought I went through all that and yet I still end up with this lot, I mean it was a long time ago.

26.Memories

26.Memories

I. mm but you were thinking about it in there, do you often think about it?
Oh no I try very hard not to.

14.analogies

I. Is the whole experience, you know the scan similar to anything else that you can think of?

No I can't thing of anything, sorry

Perceptions of the radiographers
12.satisfaction
13.your explanation

I. So if you were to explain what you had done to say a member of your family, what would you say ?

Ehm that they put you on the scanner and then warn me like , what is going to happen and it will be very niosey and it will go around them , but not to worry and to place themselves in your hands and let it go round and just daydream in between.

6.knowledge
25. Technological association

I. In your own words have you any idea how the scanner works/ what it does, I don't need technical details?

Eh no not really, I mean by trade I am an electrician but on low voltage stuff, and ehm, no it is a mystery to me this modern equipment but I accept it for what it does and it does do for me to know all the inns and outs of the thing, just let you lot get on with your work.

12.satisfaction
11.recommendations

I. Yes, that's fine and have you any recommendations or can you suggest anything that may improve the whole experience?

No I don't think so I think that I have been well treated, I mean everybody here has been so nice. I wouldn't go so far as to say that it is a pleasure to be here but..(laughs)). The whole thing has helped to solve the mystery, the puzzle of why I am here.

9.other radiology

I. Have you had any other scans tests in the x-ray department?

No ehm hang on I had one for the prostate going back a while now, they went over it to diagnose how bad it was.

I. That was an ultrasound scan was it?

Ehm yes I think so

I. Did you have any problems with that then?

No it was all straightforward.

I. Okay thank you very much for your time

CT2MALE9

I. Could you please give me your age?

..1.1 age

Ehm.. 78 years

I. You have just had a C.T scan, was that your first one?

..1.2 previous scan

Yes that was my first one

I. Could I ask you for the very first thing that comes into your mind when I show you this picture, your very first reaction

18.Symbolic Significance
4.feelings
2.concerns

What the hell is going to happen in here ((laughs))?

I. Okay then, so can you tell me now what you were expecting to happen?

Well I thought it was just an ordinary ehm, you know x-ray camera thing, I didn't know nothing about this like (referring to the scanner) you know. I didn't have a clue what was going on. I was expecting there would be a camera with flashes; I didn't expect this kind of x-ray or anything. I thought it would be the normal x-ray flashes.

3.expectations

7.misconceptions

I. So were you told beforehand what was going to happen?

No nothing at all, they just said you are going down for x-rays and that was it, oh she said a scan, but what the hell a scan means I don't know ((laughs)) but now I know ((laughs)).

21. Moulding Preconceptions
3.expectations
..description

I. Okay then can you tell what your thoughts were in the scanner?

I thought well what the hell is this like, where are the cameras and when that nurse (radiographer) said put your arms over your head (for the C.T exam). I thought hang on, how can I get my head and my arms through that! I just said well I don't think my elbows will go in ((laughs)). But no, I just thought what the heck is this I could see it going around and around and I kept thinking what kind of a camera is this? ((laughs)). It's better than the other system mind.

20. Perceptions of the radiographers

18.Symbolic Significance

I. Better than what system, sorry?

You know the normal x-rays, the flashes and everything, so I preferred this kind of x-ray yes.

12.satisfaction

I. Is the whole experience similar to anything else that you can think of at all?

No I can't think of anything, no, I have never experienced anything like it, nothing remotely like it no.

14.analogies

I. Did it concern you in any way?

Well it frightened me at first I must admit, I thought how the heck are they going to get me through that hole I thought my whole body had to get through and the platform (table). When it started up like ((laughs)) well I didn't know what to think. I didn't say anything but I thought if it comes much further in then I will have to shout and say something you know.

4.feelings

18.Symbolic Significance

24. Orientation

25. Technological association

I. Can I ask you what you were thinking about when you were in there?

Firstly, well how the heck can they take my x-rays when there is nothing, I could see the circle, I didn't know whether that was the x-rays or what. I could see the hole and these two little lights (on the gantry) and I

25. Technological association

4.feelings □
 25. Technological association □
 13.your explanation □

thought where's the films and thinks like that like ((laughs)). I wasn't actually frightened in there, I must admit I wasn't. I mean if anybody says to me they are going for an x-ray, I would say don't worry you will be all right.

I. So if somebody in your family was going to come along now and have one of these scans done what would you say to them?

13.your explanation □

Tell them not to worry, I would just say that you need to lie down with your arms up and just go through that socket (scanner), I say socket because to me it is a socket. I was an engineer by trade like, I say you go in there so far and they take photographs of you, you won't see no flashes or nothing. and ehm I'd tell them about the injection, then they are sure not to come ((laughs)).

21. Moulding Preconceptions □
 22.Stories □

I. Okay could you tell me then in your own words how you think that C.T scanner works?

6.knowledge □

I never had a chance to study it or anything you know, probably x-rays but I couldn't find any ((laughs)), I don't really know.

11.recommendations □

I. Okay have you any recommendations as to how we may improve the whole experience for patients in the future?

I think it would be best to know beforehand, especially women because they are a bit timid and just advise them, that's it.

I. Have you had other x-ray tests done?

Yes, they were fine I could see what was happening so yes no problem at all.

I. Okay thank you very much indeed

CT2AMALE10

..1.2 previous scan

**I. You have just had a C.T scan is that right ?
Yes**

..1.1 age

**I. Oh I just need your age for the tape please?
Ehm 39**

3.expectations

I. Thank you very much, was that the first scan that you have ever experienced?

Well like that yes it was, I mean I have had different ones like, I mean I have had a C.T scan that was different to that. I mean I don't know what it was called one where I put my hands out like that (demonstrates by placing both hands on the table – not quite sure what he is referring to, I assume an M.R scan or bone scan with radio-nuclide imaging) that's what I was expecting today; I would just put my hands on a flat bed and ehm..just stay there for about 15 or 20 minutes or whatever really. So I was expecting the same again this time around, you know.

21. Moulding Preconceptions

I. That's fine, I am going to show you a picture in a moment and I would like you to tell me what the first word or thought is that comes into your mind. (show picture of C.T scanner) Scan

18.Symbolic Significance

I. Okay, can you tell me then, please, what you were expecting to happen?

Ehm.. as I have said already really, I was expecting just to place my hands out in front, I certainly wasn't expecting to go in there on the bed (points to C.T room). I was expecting something totally different to what happened to be honest. Ehm .. I found it to be pretty awkward, you know the position, and being in there, but I suppose that's it's got to be done.

3.expectations
2.concerns

24. Orientation

20. Perceptions of the radiographers

**I. Can you remember what explanation you were given in the room and did you understand it?
Oh yes, perfectly**

I. So when you went into the room and you saw the scanner, can you tell me what your thoughts and experiences were at that time?

Well, again I was still thinking that ...although I had seen the machine I was still thinking there was something else going to appear, but what upset me in there was the positions and so forth I had to get into to do the scan, because perhaps if I had known before I went in there what I was to expect then it wouldn't have been so bad, but for me it was a bit awkward and a bit off putting what they had to do in there.

18.Symbolic Significance

..description

I. So your main problem was the uncomfortable position in the scanner?

Ehm.. yeh I was explaining this to the nurse(radiographer) and she said that the wrist and elbow are the most awkward ones to do. You know putting my wrist in those positions was a bit painful but you know it has to be done.

24. Orientation
27.Compliance

12.satisfaction

I. Was the whole experience of the scan similar to anything else that you can think of, however strange or bizzare?

No, not at all, because I was just focused on keeping my arm still that was the only thing I was thinking about to be honest with you. I didn't have any other thoughts, I

14.analogies
17.Coping Strategies

14.analogies
17.Coping Strategies

just kept thinking I must keep still, that's all I was thinking.

13.your explanation

I. **If a member of your family was coming along to have a C.T scan , how would you explain the procedure to them?**

Basically, you have just got to lie on the bed and ehm keep as still as possible, that's how I would explain it anyway.

6.knowledge

I. **Again in your own words and I don't expect any technical details , do you know how that scanner works ?**

I suppose that it takes different sections of your body, bones and so forth, you know pictures taking sections from the inside; is that right?

I. **Yes that's it, do you think it uses x-rays or something else?**

X-rays, yes.

I. **Have you any recommendations as to how we could make the whole experience better for patients?**

Well probably just someone to explain basically what is going to happen. My doctor said "You are going for a scan" well as far as I was concerned that meant..... again I related back to my previous experience because that was what I was expecting. If someone could have said that it's this that and the other then I'd have no problems or anything about that; I'd know what it was going to do basically. I must say though that the person who was in there (the room) was very helpful and told me what to do and everything.

..description

15.Communication
20 Perceptions of the radiographers

I. **Have you had other x-rays and examinations?**

Well yes, but none of them presented me with problems, it was only this one that was so uncomfortable.

9.other radiology

I. **Okay, ...thank you very much indeed.**

CT2AMALE11

Age: 68

..1.1age

..1.2 previous scan

I. Was that the first scan that you have had?

No, I've had both M.R.I and C.T before.

I. Okay perhaps we can expand on those a little bit later on. I am going to show you a picture

of something now and I would like you to tell me the very first thing that comes into your mind

(show picture of C.T scanner)

18.Symbolic Significance

Circular

3.expectations

I. Okay that's fine, so can you tell me then what you were expecting to happen today?

Well.. I wasn't too sure about this one ehm I always thought you did the scan with the jelly.

7.misconceptions

I. Right

You know on the C.T and the M.R.I is a similar scan to that (points towards the C.T room). I

wasn't too sure if I'd be in the machine today.

5.Information

I. Who told you that you were coming for a scan?

The doctor on the ward told me.

..description

I. Did they explain what was going to happen to you?

No they hadn't said anything about it, ehm they probably think I understand because I've had them before.

..description
3.expectations

I. Okay, so coming down here today, what were you expecting?

Just to have a scan ehm..I wasn't really sure what was going on but I had the jelly in my mind all the time thinking that I'd be lying down and they would rub that thing over me with the scanning machine. Similar to that you know, I think I've only had one or two before (C.T's) but obviously they have must have been M.R.I.

20. Perceptions of the radiographers

I. Did you fully understand the explanation given to you in the room?

Yes, I did that was easy enough

4.feelings

I. Can you tell me what your thoughts were then when you were lying in the machine?

Nothing really, I was just sort of.... a blank my mind, you know I wasn't thinking of anything really.

4.feelings

I. Can you remember back to when you had your first one, your M.R one, what you were thinking at that time?

It was a long one.

I. A long what?

I had a liver resection it took about 45 minutes and it was very hot, I think the... I don't know why but it was very uncomfortable, being in there so long I think.

12.satisfaction
15.Communication

I. So was that a problem for you in there?

Apart from being warm and that, I didn't have too much of a problem that I remember. I did say

that I was uncomfortable and they (radiographers) answered over the microphone

12.satisfaction
15.Communication

thing, that it
wouldn't be very long you know, it's for your good sort of thing.

15.Communication
4.feelings
12.satisfaction

I. And how did you feel about that?
I just was uncomfortable with the heat, I wanted to get out, but I think it was just that particular scan. Maybe, I don't know it was just very warm on that day and yet it was still wintertime, so I'm not sure what was going on really.

14.analogies

I. Okay, is the experience of having a scan either the C.T or the M.R.I similar to anything else that you can think of in life, however strange or bizarre?
.....No nothing that I can think of.

13.your explanation

I. So if a member of your family were coming along to have one of these scans today, how would you explain it to them?
I'd just tell them that they would be on a bed and they would be moved through a machine, your body placed into that machine and photographs taken, or x-rays or whatever they are of the particular part. I.. I wouldn't say it was a bad situation or anything, you know, that it was reasonable to have it done you know.

6.knowledge

I. Okay that's fine, in your own words, I don't need any technical details but do you know how that scanner works?
Well I understand that it's a camera thing that photographs the part .. the organ whatever it is.

6.knowledge
7.misconceptions

I. Right do both scans use x-rays or?
Well it comes out I think as an x-ray doesn't it. It just moves up and takes it in different positions to get the whole of the large photograph.

12.satisfaction

I. Is there anything, I mean you have had C.T and M.R.I scans so you have some experience of both, that you could recommend that would help in the process for patients coming along, especially if they hadn't had one before maybe?
No it's quite satisfying really, I mean the longer you get under the thing you get a bit more uncomfortable and ehm I can't think of anything that you could do to make things any different.

22.Stories

19. Isolation

I. Right, were you aware that the radiographers weren't in the room?
Yes, I remember that from last time, the microphone thing.

25. Technological association

I. So having had both scans, C.T and M.R.I, is there a big difference between them as far as you are concerned?
It was just the long one (M.R.I) that I had problems with, they are very similar, I mean you still have an injection and your body goes into that machine but it's just the length of time.
It's really the .. physical part of it, you're lying with your arms back and of course you're in a hard position aren't you, on your back and the bed is very hard and you do get uncomfortable.
It's more of a board than a bed isn't it? But generally, I would say that it's no big problem having a scan.

I. That's nice to hear

I mean some people do have problems don't they? I mean it's the claustrophobic side of things. We discussed this the last time I had a scan.

21. Moulding Preconceptions □

I. Really?

Oh with the family like, they ask you like what it entails and that; you know that you go through the machine. My daughter, she has had a scan I can't think which one it was but the idea was,

12.satisfaction □

well, you know like me, it's one of those things that you have to have done.

I. Okay, that's very useful thank you.

CT2AMALE12

..1.1age

Age : 48

..1.2 previous scan

I. You have just had a CT scan, was that your first one?

Yes

..1.2 previous scan

I. Have you had any other scan?

Ehm the jelly scan where they rub the jelly on your stomach [ultrasound]

18.Symbolic Significance

I. I am going to show you a picture now and I would like you to me the very first word or thought that comes into

your mind please [show photograph of MR scanner]

Washing machine

14.analogies
25. Technological association

I. Fine, can you tell me what you were expecting today?

Ehm I was expecting one of those circle thingies (makes circles in the air with hands) and a much longer tube that your whole body goes into and rotates around me with me stuck inside.

18.Symbolic Significance
21. Moulding Preconceptions

I. Right, where do you think you got that idea from?

I think from television programmes like ER (Emergency Room) where the episodes make it dramatic and they go into big tubes and stuff but it was nothing like that.

6.knowledge
4.feelings

I. Did that concern you at all?

No it didn't concern me, I knew it was a complicated way of taking an x-ray sort of thing.

..description
5.information

I. Were you given any information beforehand?

Not really they just said CT scan and I nodded because I had an idea what they were talking about. I suppose that I could have got the information if I had asked for it, I mean presumably they knew I had an idea. If I didn't I would have asked about I wasn't frightened or anything like that you know. But what happened was pretty much what I expected it wasn't a long tube it was a circular thing.

14.analogies

I. You were given an explanation in the room and you understood all of that?

Oh yeah

2.concerns

27.Compliance

I. So when you got into the scanner, what were you thinking about?

The first I would say, this sounds daft I know, Star trek you know. Something like futuristic medicine with all the technology and that. I was also thinking that I hope it turns out all right. I was thinking that I had to do my best and hold my breath and things and follow the instructions so that it comes out clear. I hoped this would give them a more positive picture on the scanner.

26.Memories

I. Why did it remind you of Star - Trek?

Well the computers and it's a round thing and stuff and when I was a kid I used to be a fan of that and science fiction. I don't know really why it came to mind.

25. Technological association

I. Did it remind you of anything else from your childhood?

(long pause) no I don't think so.

I. So was the whole experience similar to anything else in life, however strange or bizarre?

Not really when the lights went flashing around it was really weird, you that its not going to harm you because you know it's just x-rays sort of thing. I wouldn't say completely weird because that

25. Technological association

is the sort of thing that is expected really in 2001It is advanced medicine today.

25. Technological association

I. If someone in your family was going to come along and have a scan, next week say, how would you explain the procedure to them?

I would say that it is just like getting an x-ray, although it takes longer, and just the same thing but the x-ray is leaning against you [gantry] and you just lie on a bed that goes into the front of like a washing machine but thicker. Then you go up and down automatically on the bed and you don't get any pain or anything from it, you don't even know that it is being done. Apart from the noise, which is a slight humming, you don't even know what is happening. Nothing to be scared of.

4.feelings

I. Did you know the radiographer was in another room?

Well I always wondered that, even for a normal x-ray, they go behind the screen. I thought hang -on they are putting me in danger here, but these people are doing it all day, they are exposed to the rays all day and that's what it will be. I'm just getting a short burst, maybe 10 times in my life, something like that, but these people are doing it day-in and day -out so they have to have some protection.

2.concerns

20. Perceptions of the radiographers

I. Could you see them?

No but if I lifted my head up I knew they would be behind that window.

20. Perceptions of the radiographers

19. Isolation

I. I don't require any technical details, but have you any idea how that machine works/ what it does?

Ehm... I think it is x-ray that is fed into a computer and the computer digitises it or something like that.

6.knowledge

I. That's very good. Have you any recommendations that might help patients with this type of scan in the future?

I think it is a good thing, if anything is wrong with you. I think it is more thorough than an x-ray and goes into it more and catches things early. Nothing else really it is just like an x-ray.

12.satisfaction

13.your explanation

25. Technological association

I. Have you experienced any other x-rays?

Well just the ultrasound I told you about and a couple of x-rays on my chest.

9.other radiology

12.satisfaction

I. How did you find them?

Oh easy enough just walk in and stand against the thing

I. That's great thank you very much.

CT2AMALE13

Age: 34

..1.1 age

I. You have just had a CT scan, was that the first CT scan that you have had?

Yeah

..1.2 previous scan

I. I am going to show you picture now and I would like you to tell me of the very first word that comes into your head [show photograph of CT scanner].

18.Symbolic Significance

Ehm toilet seat is the first thing that comes into my head.

I. Okay, you have just had a CT scan, can you tell me what you were expecting to happen?

3.expectations

Ehm.. well I'd been told sort of that you go through the tube and basically what happened was what I expected; I just didn't expect an injection.

I. Who told you about the tube?

21. Moulding Preconceptions

My mum, she has had one.

I. What did she say to you?

..description

She said that you lie on the bed and go through a big tube and you cannot see nothing. So this [CT] was not like a big shock or nothing.

I. Did you get any information about what was going to happen before you came down?

..description
5.information

No, nothing they told me was that I was going for a CT scan on the 31 st and that was it like.

I. The information given to you in the room, was that clear and easy to understand?

20. Perceptions of the radiographers

Yeah, yeah no problem.

I. So what sort of things were you thinking about when you were laying in there, can you remember?

4. feelings

20. Perceptions of the radiographers

Ehm..it was freezing, I am still cold now. That was it really they [radiographers] said that the injection would give me a hot flush and feel that you are wetting yourself so I was waiting for that to happen really.

I. What did you think of the scanner when you saw it; presumably you were expecting something else?

17.Coping Strategies

27.Compliance

Well I was told to close my eyes, so I had my eyes closed all the time.

I. So you didn't open your eyes at all?

17.Coping Strategies

19. Isolation

20. Perceptions of the radiographers

No I didn't, that was a bit weird really. Why I am closing my eyes, what's this all about with no one else in the room when you are going through it.

I. What about that fact that nobody was in the room did that bother you?

19. Isolation

20. Perceptions of the radiographers

Well i heard her [radiographer] going out the door and when they spoke to me it was by a computer speaker.

15.Communication

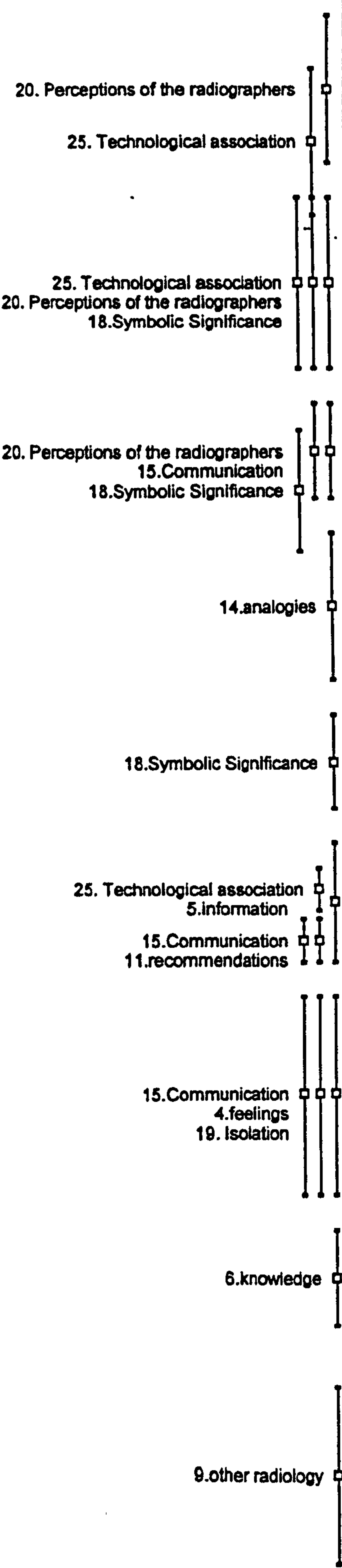
I. So you couldn't see anyone since you had your eyes shut?

20. Perceptions of the radiographers

15.Communication

No but I guessed, when I first went there I saw a woman behind a glass window, so I guessed they were there.

Although maybe they weren't ((laughs)) I imagined they had to be there to move the thing up and down. I imagined that they had to look at you from somewhere to know when and how far to move or whatever.



I. So you heard the door slam and then you were on your own. Did the radiographers tell you they were leaving?

No, nothing just walked out when I heard the door slam I thought I was on my own then and that microphone thing is really strange as well but then I figured I must be on my own. It was breath in breath out and stuff.

I. Is that impersonal

Yes definitely it is, I would much prefer a human being, I mean I couldn't or didn't want to speak back to a computer. What if I got it wrong would they [radiographer s] know or would it be that computer?

I much prefer the staff to call me by my name and ask do you feel all right and that kind of thing.

I. So did they speak to you at all?

Only at the start and then for the injection, but she sounded as if she didn't mean it, although she must say the same stuff all day long. It would be better to have a two-way conversation.

I. The whole experience in there [scan room] was it similar to anything else that you have experienced in life, however strange or bizarre?

No nothing, I had an x-ray once it was similar, you know being in a room with a machine sort of thing and holding my breath.

I. When you saw the machine what did you think?

Well it was similar to what I expected really from what my mum had told me. Now if she hadn't of told me I wouldn't have known what to expect at all.

I. Nothing?

No because nobody told me nothing. I think it could worry some people, I mean it is such a big monstrosity like and if you don't know then it could worry you. I think that things should be explained more.

I. If you were going to explain this procedure to say a member of your family, what would you say?

I would say that you have got nothing to worry about, don't be upset by anything, you lie on a bed that moves up and down and you get an injection to see through your body for an abnormalities I would also say that it is pretty impersonal but try not to feel isolated by it. It's a big machine that you travel through.

I. Have you any idea how the machine works?

Sort of yeah, when you go through there is a green light above you, I think that scans your body with a laser or something and photographs you as you move up and down.

I. Does it use x-rays?

Ehm I would say that it probably does, I guess it does ,yes.

I. Have you had many other types of x-rays?

Well a few chest x-rays and that and one on my ankle but they were okay, they were different to this one today.

I. Thank -you very much indeed.

MRMALE1

..1.1 age

AGE 63

..1.2 previous scan

I. You have just had an M.R scan, was that the first one that you have had?

Yes, first one ((shaky and sweating))

I. Are you okay?

No problems, it was fine, aye no worries

I. Could just tell me then please what you were expecting to happen?

Well I have been told so much that I expected a tunnel where there would be a bit more room, I am not a small person, but to get into that tunnel ((points to the M.R scanner)) where your shoulders are tight against the side and your arms are jammed against your side, ehm your chest is so close to it. You know I am 18 stone, so for the first few minutes is it okay, but then it starts getting hot, it left me so short of breath for the last scan they needed to do that I had to squeeze the button and get out. I couldn't go ahead with it any longer. I started to sweat and feel uncomfortable and I think it was just lack of the space and the heat that is generated is awful.

2.concerns
3.expectations
..2.1 problems

I. You said that you had expected a tunnel, where did you get that idea from?

Ehm from people that have them before and talked about it, you know this tunnel you go through and are so close to the machine. But that was the biggest fear that I had, going through the enclosed tunnel.

3.expectations
7.misconceptions

I. Did that worry you beforehand?

No I wasn't worried because I thought personally that it would be quite wide, but when I got into it and slid down the tunnel, my shoulders were literally jammed on the side and my arms were touching the side and I couldn't move them at all. The only thing I could move was my fingers, my chest was so high and so close I felt really bound up tight as if I were enclosed in a tomb.

2.concerns
..2.1 problems

14.analogies

I. Did you have any information before the scan?

No not about the machine no, nothing at all, oh I was asked if I was claustrophobic, but I didn't actually think that I was claustrophobic. I have been in much worse positions when I was a younger man.

2.concerns
5.information

I. Okay that is fine, ((interrupted))

Ehm I think you should be given some information because the temperature rises in there, it starts off and you are fairly cool and everything, I mean I dressed in shorts and a tee shirt, but after the first scan has gone then you feel the heat rising. It builds up all the while I could only go three-quarters of the way through it because I was sweating so badly.

2.concerns
5.information

I. Could tell me what you thoughts were while undergoing the scan?

I saw the machine, but I wasn't worried you know, well not until I got my head and shoulders in there then I felt trapped. That's when I worried. I began to think this is 'bloody dire,' I feel like a cork in the neck of a bottle, if anything goes wrong here I am stuck. Any problem of any sort and I would have been trapped in I couldn't move in anyway, that was the first thing that entered my mind once I started panicking.

10.reaction in scan
14.analogies
..2.1 problems
2.concerns

I. Were there any other issues that concerned you?

2.concerns
..2.1 problems

Ehm as it got so hot I got short of breath

I. Are you normally short of breath?

Ehm I have a heart condition but I do exercises, but it was the rise in temperature that constricted my breathing, I wanted to expand the chest and I couldn't ((concerned expression)), it felt like suffocation as if I couldn't breath. The tightness of the chest and the awful heat and I couldn't breath.

2.concerns
..2.1 problems

I. If you were going to explain this procedure, to say a member of your family, what would you say?

((laughs)) I would say that an average size patient wouldn't have many problems; they would not feel the enclosed space as much as I did. It's like me saying to you let's go to a tailor and he gives you a suit two sizes too small, then he gives you my suit: one you have plenty of room in, the other you can hardly breath in.

13.your explanation

I. So if you needed another scan what would you do?

I'd have to go ahead with it in order to find out what was wrong with me. I'd still have to go through it but nothing would change would it? You know the enclosed space. I've been in enclosed spaces many times before, I was in the armed forces for 22 years and the police force for many years so I've been in some bloody awful positions, some tight positions in enclosed spaces, but there was always that element that you could get out, with this once you're in that's it, you can't get out. It got hotter and hotter in there, I just had to get out somehow.

2.concerns
4.feelings

I. Have you any idea (in simple terms) how that equipment works?

No, I have an idea that it takes a 3D picture of your skeleton and works on a magnet or electro-magnet or similar.

6.knowledge

I. Have you any recommendations that you might be able to suggest to improve the whole experience?

Well I couldn't say a bigger tube, could I?

I. Oh you can they have open scanners now

That would be the only improvement that I would say, because I don't know how you would manage with guys any bigger than me in there[scanner]. I have a 48-inch chest so I am not going to get into a tube that is built for a guy with a chest of 40 inches. So yes, and people are getting bigger not smaller, so information beforehand as well would be good. I mean obviously that machine does heat up, so it would be nice to know this information, you see it comes as a surprise as you lie there. In front of a normal x-ray machine you don't feel anything do you? But this just gets hotter and hotter and is in a very enclosed space. When you are in there it really is very hot indeed.

11.recommendations

I. Thank you very much indeed.

MRMALE2

1.1.age

Age: 55

1.2 previous scan

I. Now you have just had an M.R scan, was that your first one?

Yes it was

3.expectations

I. Can you tell me what you were expecting to happen?

Well, ehm roughly the same but I was surprised how noisy it was and very claustrophobic as well, I mean I went in feet first, instead of head first, but it still felt very claustrophobic.

3.expectations

I. So you had imagined it to be less noisy, and any other differences?

Yeh and a lot bigger, the tunnel itself I thought would be a lot bigger.

5.information

I. Were you given any information beforehand?

Yes I had some paperwork with the appointment which explained the procedure really quite well, ehm the nurse told me quite well what was going to happen before I went in, and it was exactly right as well.

5.information

I. Do you think that there could be anything else include in the leaflet?

No not really no, there was enough information

10.reaction in scan

4.feelings

12.satisfaction

4.feelings

I. Fine could you tell me what it was like for you in there [points to the scanner]?

It was claustrophobic ehm.. you are told to keep very still for err between 20 and 25 minutes which is (laughs) makes you very conscious, but other than that no trouble at all.

12.satisfaction

I. Were you aware that the radiographers weren't in the same room?

No that was okay I knew I could push a button in there if I needed to, so that was okay.

14.analogies

10.reaction in scan

I. Lots of people have said that this whole experience is similar to something and made analogies, is there anything that springs to mind as far as you are concerned?

No not to me I can't think of anything else, or anything similar to that before, I have never thought of myself as claustrophobic but I know that when I was actually going into the tunnel it made me feel very claustrophobic, when it stopped I was okay. But it reminds me of nothing in particular.

14.analogies

I. Some people say that it sounds like a heart beat, can you relate to that?

Yeh, yeh, that's it

10.reaction in scan

I. I mean you had your knee done so you were only half way in anyway, would you be okay having your head scanned?

Well I actually said to the nurse, do people go in here headfirst? because ehm I would really feel claustrophobic then. I mean I know that I am strong enough to over come it and everything and I would have lay there for as long as it takes, but I would have been very glad when the nurse came to get me out. If you have to overcome it then you have to.

12.satisfaction

I. So you would have another one if you needed to?

Oh yes definitely

12.satisfaction

13.your explanation

I. If you were going to explain this procedure now, to say a member of the family who was due to have a scan, what would you say to them?

I think you have to reassure them don't you, I mean you don't do these things without it being a necessity so ehm, you know if it was a child then I'd be concerned, you know, certainly have to have a parent with them, I'd want the wife to go in if it was a child. I should imagine that it may have to be done several

12.satisfaction
13.your explanation

times because I
can imagine children being very, very nervous in there. But ehm I don't, although it is a big
surprise, especially
the noise, once somebody tells you that it is going to be very noisy you know you are
prepared for it so it is all
right.

6.knowledge

I. Without having to give any technical details, do you know how that scanner works?
No not really no, it's very similar to a television the lines shooting backwards and forwards
across your knee as
far as I am concerned. That's about all I can say.

11.recommendations
12.satisfaction

I. One final question, have you any recommendations that you could make that would improve the whole process?
I don't think, so no, not really, a much bigger and quieter machine would be nicer (laughs) but
other than that
no, I mean the nurses are excellent. It's nice and comfortable here, it's ehm everything is
fine.

11.recommendations

I. Would a chat beforehand and perhaps a walk around the equipment be useful?
Well yes, but we are lay people, if you know what I mean, so we wouldn't understand if you
showed us the
machine.

I. No, not a technical explanation, just to show you in detail where your head goes and things, obviously time permitting

No I would just rather get on with it.

I. Okay that's fine thank you very much indeed for your time.

MRMALE3(2A)

I. Could I please have your age?

..1.1age

57

I. Okay, now you have just had an M.R scan, is that the first scan that you have had?

..1.2 previous scan

Yeah

I. Now I am going to show you a picture of something in a minute and I would like you tell me the very first

18.Symbolic Significance

thought that comes into your head (show picture of M.R scanner)

Washing machine

I. Can you tell me then what you were expecting to happen today?

13.your explanation

Well just to lie down and somebody push you in, somebody in the room, you know talking to yer, you know

explaining what is going on. It's a bit frightening really, I mean you feel like yer floating and that noise;

4.feelings

14.analogies

well it's like a Tommy gun going off. I mean I didn't have much idea of what was going to happen, I felt like I wanted to get up quick.

I. Ehm did anyone explain what was going to happen before you came for the scan?

No

I. Did you have anything to read or anything like that?

No

5.information

7.misconceptions

I. So what did you think you were coming for?

Like an x- ray more or less

2.concerns

I. So was it a surprise that you had this scan?

It was certainly, yes

I. Okay, can you tell me then, the explanation that you were given in the room, did you understand it?

20. Perceptions of the radiographers

Well, aye I understood when she said lie down yeah. She also said it's going to be noisy and to put these in your ears (cotton buds) yeah, yeah

I. So you got onto the table then, can you tell me what you were thinking about?

25. Technological association

2.concerns

I was going to get jammed, yeah.

I. Did that worry you at all?

19. Isolation

It did a bit yeah (concerned expression and nervous movements), you know you don't know how long it's going

to be, you see you loose all track of time in there and you don't know whether you want to get up you think

you'll get trapped.

I. What sort of things were you thinking about while you were having the scan?

27.Compliance

Just thinking what's happening, how long it's going to be, am I moving? The sensation of moving.

I. Right

4.feelings

I mean you don't know whether you're going to get trapped, I did think I was going to get trapped.

I. Were you worried by that?

Well slightly, I wasn't that worried like (nervous laughs)

17.Coping Strategies

I. Would you have know what to do if you had a problem would you?
.....Well yeah press that button

19. Isolation
2.concerns

I. Did you know where the radiographers were?
NoI just, well felt a bit slightly burning there (points to his upper lip) to me in m-
mind I felt this
burning just here (points to upper lip again) that's what it feels like to me, you know

I. Mmm It shouldn't (interviewer shows concern, but no visible marks)

14.analogies

I. So that whole experience of having the scan; can you think of anything else
in life that it could be similar
to?
Being in one of those things on the fair ground, you know, those aeroplane things,
being enclosed but moving
around.

24. Orientation
25. Technological association
23. Self

I. And any other thoughts in the scanner?
.....Just, well being trapped, you get that little feeling that you're going into
something tight, because the thing
(coil) is tight on your head. It was just a funny feeling like, I think if you had
claustrophobia or something or
had something wrong with yer, then I think you would start panicking quick myself.

13.your explanation
25. Technological association

I Okay then if now you were going to explain that whole procedure to say
someone else in your family, what would you say to them?
It's like being in a tunnel with like a Tommy gun going off, someone firing at you,
you know. That's the
sensation it's a funny sensation, you feel a little bit of a shake, but it's that bang,
bang, bang all the time.
Then it stops and something else goes off like you hear it again. But you do loose
track of time whether you
have been in there a couple of minutes or a longer time. You loose that sensation of
time, I mean you start
thinking, have they gone home (radiographers).

20. Perceptions of the radiographers
19. Isolation

I. If you didn't know where they were did you wonder what was going on?
Oh aye yeah, you can't see nothing at all, you think they have all gone and left you
inside this machine thing
(scanner).

6.knowledge

I. In your own words, I don't expect any technical information, do you know
how that machine works?
No

I. Nothing at all, does it use x-rays or?
Oh aye, it's got to use something to get through to your skull and that, or whatever.
your brain and all that,
but how it does that not got a clue, mate.

11.recommendations
18.Symbolic Significance

I. Is there anything that we could do that would improve the process for you?
Ahh, well something like ehm, I don't whether you'd have a photograph or a film
going on, where it explained what
was happening; you know something that you could see. You understand what I
mean?

24. Orientation
11.recommendations

I. Yeah is this beforehand?
No, when you are going through sort of thing, your mind is going, you don't know
what is happening, it's just
blank in there (scanner) you can't see nothing. (laughs) That's the scary part what
you can't see anything. All
you see is the inside the white thing (inside of scanner aperture), you know you
could have a film going or
something like that.

I. okay, so have you had other scans and x-rays before?

I,ve had an x-ray like, that's nothing at all. I'm supposed to be getting one here on my neck at some stage.(points to his neck)

I. That's fine thank you very much for your time

Okay mate

Leaving the room....

Hope that's okay boss,they don't explain to you what's involved (cough), you know, I was in the dark.. I didn't know nothing about that.

2.concerns
5.information

I. So when were you told about the scan

Well just when I was in hospital, they said you're going down for a scan; I thought it was an x-ray. The fella next to me said, "You go in a tunnel" because he'd had one before.

21. Moulding Preconceptions

I. Oh what did he say to you?

He said, "You get locked in this tunnel and it's very scary at times".

..description
2.concerns

I. So how did you feel about that?

Well I didn't know I was expecting to go into some tunnel yeah, but it's a different feeling once you go through yourself.

I. So did you think it was as scary as he said?

...It is a bit frightening, it's not frightening in the way you are scared it's just that you think something is going to happen and you are going to get trapped in it. That's the feeling you get, you know trapped; I thought I was going to get squashed. I mean and you loose the direction, you know, which way you are going, you don't know whether you're going forward or back or up or down,it's like being in space I suppose.

23. Self
24. Orientation
14.analogies

I. That's great thank –you very much indeed.

MRMALE4(2A)

I. May I ask you your age please?

..1.1age

51

I. You have just had an M.R scan, was that your first one ?

..1.2 previous scan

The first one, that type, I have had numerous others ehm a lot. But that's the first with that cage (coil) over my head.

I. Okay then, I am going to show you a picture in a moment and I would like you tell me the very first thing that comes into your mind when you see it. (shows picture of the M.R scanner) Scan

18.Symbolic Significance

I. So can you tell me then what you were expecting to happen ?

25. Technological association
3.expectations
2.concerns

I thought I was going through the bigger one (draws a large circle in the air), through the ehm....the big circle I didn't know I was getting the little frame on.

I. Right so you thought you were going through the larger scanner the C.T scan, is that what you had before?

..1.2 previous scan

Yeah

I.Were you happy with the C.T scan you had before?

12.satisfaction

Yeah, no problems really. I get panic attacks every now and again but I haven't been getting any recently, you know.

I. So that's what you were expecting to happen, did anyone tell you about the scan before you came?

..description

No the doctor just said to me, I've been having trouble with me head and sensations around my eyes and nose so he said, "I'll put you down for a scan" and also sent me to the neurological department.

I. Did you have any information sent to you about the scan?

5.information

Yeah I got ehm..a form or letter thing telling me about it.

I. So reading that, did you still know what was going to happen ?

7.misconceptions
24. Orientation
3.expectations

Well more or lessI even thought at one time that I might be sitting up because it was going to be my head you see. But that was only myself and what I thought would happen. I thought to myself, well I've laid down that many times that I might sit up this time.

I. Can you tell me then, when you went into the room, you were given an explanation; did you understand it?

20. Perceptions of the radiographers
12.satisfaction

Oh yeah, yes I did the girl (radiographer) said lie down and it will make some noises, she gave me some cotton wool and put two little pads at the sides of my head. I was happy enough like.

I. So you're inside the scanner now, can you tell me what you were thinking about ?

17.Coping Strategies

Ehm ... well if I think I might be having a panic attack what I normally do is ...it's to keep me occupied because I don't know how long I'm sort of going to be in there. Some say it's only a minute but when you are lying there like that it seems an awful long time. So normally I either countor reverse up

17.Coping Strategies

from 100 backwards.

17.Coping Strategies

I. So you were counting to get an idea of the time?

No, no just to keep myself occupied, I'll go like ehm upto 10, then 60 to 100, then 100 backwards to maybe 70.

26.Memories

I. Why were you doing that, were you doing that to stop yourself panicking?

Oh yeah to stop my self panicking that's why I do it. I've had scans done before and I do panic. Well when I

23. Self

first had them done I panicked then. Ehm in 1986 I had to have a mask put on me in another hospital (radio therapy)

and I panicked twice then because the mask was clamped on me you see, but once I got used to it, it was no problem. So that's why I use little gimmicks myself to stop myself. I get more relaxed by counting.

I. Is that something that you have developed yourself?

Yeah

17.Coping Strategies

I. So you're counting and keeping your mind on the numbers?

I'm more relaxed then you see I've got dead tissue here (points to his neck) and I get uncomfortable and if I go into a panic state well that's when I have to press the button. But I didn't have to press the panic button.

I. Were you thinking of anything else in the scanner?

No

26.Memories

I. In the scans where you have had the problems and you have had to press the button...I mean I'm assuming that you have to do that.

Yeah that was in another hospital, I mean I was clamped, your heads clamped into the mask. At that time that was

very scary, I mean it's like having a very tight glove fitted on you, all over your face and then clamped and

you can't move your head at all; not even a fraction.....at the time that really freaked me out, but

after the second lot you learn. Well I learnt to deal with it and relaxed more, but there were some patients,

at the time, scared to go.

10.reaction in scan

17.Coping Strategies

I. Really, because though they would be trapped?

Yeah because they were trapped in you see.

I. What sort of things did the patients say to you?

Well there was 3 of us that had to have this type done and the system they used in another hospital was ehm..well

if you were a patient going through now you would sort of explain to me what was going to happen to put me at ease.

But at that time it was a woman and she was terrified, so she never ever came to see me. It was only when the

woman was going out a couple of months later that she came and said to me she was supposed to come but she was terrified.

22.Stories

I. So they were supposed to do that?

Well no, it's ... well

I. Informal?

Well yes , I mean you don't use a patient that's in a bad state, you use a patient that's been okay with the

treatment and everything. If they have felt good about it themselves then they put you more at ease.

17.Coping Strategies
16.Control

I. That's very interesting, right so you were thinking about the numbers and

22.Stories
16.Control
17.Coping Strategies

not anything else?

No, just trying to keep myself relaxed all the time.

19. Isolation
10.reaction in scan

I. Can you tell me then, that scan that you have just had, is it similar to anything else that you can think of?

I just felt closed in closed in, I am not sure if they were just bars or were they plastic things coming over me, I wasn't very sure to be honest with you. Ehm but I didn't notice the plastic there was any there. So all I can say is that I felt a little closed in.

25. Technological association
14.analogies

I. So if you were going to explain the procedure now to say some one else in your family, what would you say to them?

I would just ehm .. the big one is like going through the front of a washing machine (makes large circle in the air, assume C.T) so this one I would say, you're still going through the front of the washing machine but there's a smaller sort of cage coming over your head. I'd also mention that you have the cotton wool in and I think pads of rubber, I'd tell them not to worry. I mean the thing us that when people know that they are going for something like that they are in a panic state any how, because it either tells you that something is wrong with you or everything is all right.

13.your explanation

I. So the condition is the worry as well as the actual procedure?
Yes, that's it

2.concerns

I. Okay in your own words, I don't need any technical details, can you tell me how that machine works or what it does?

It takes a number of pictures of your, well what ever part of your body you're having done, and I've seen them on the board when I have been to see the consultant, quite a number up there and then it identifies if there is a problem like putting a little dot and then sometimes the consultant will say to you, well this part here we think there is whatever, you know maybe a tumour or whatever.

18.Symbolic Significance
6.knowledge

I. Does it use x-rays or do you know?
I think it's ehm x-ray films

7.misconceptions

I. Right, so is there anything that we could do then to improve the experience for other patients?

Just to make sure that they are relaxed or well with the noise in that one(M.R) you couldn't really play any music. I have had scans , and I think that it helps a lot, where the people actually talk to you through .. sometimes there's a window and you can just sort of glimpse the person through the window.

11.recommendations
19. Isolation
20. Perceptions of the radiographers
15.Communication

I. Could you see the radiographers today?
No I couldn't see nothing

19. Isolation
20. Perceptions of the radiographers

I. Did you know where the radiographers were?
No, I knew they weren't in the room like.

I. Did that bother you ?

16.Control
 27.Compliance
 17.Coping Strategies

101
 102
 103
 104

Well yeh...ehm .. I've had .. you know a few before and you've got the buzzer thing in your hand if you did panic. But I've learnt over the years that if you did panic they've got to take you out, but at the end of the day you've still got to go back in so try and relax and get it done in one go; you know that's my.. way of looking at it.

4.feelings
 17.Coping Strategies
 25. Technological association

105
 106
 107
 108
 109

I. So the other times that you have had problems at another hospital and elsewhere, what were your main fears, I mean you have told me a lot, you were trapped and things but what did you think might have happened?

You couldn't move you see..you ..you couldn't move your head, you were just, you were just jammed there you just could not move your head. I mean at that time you put your hand up you never had a buzzer. It's like, that's your head, the mask goes on and 'clamp'; now I don't know if they still use that procedure, that was some time ago. But these other scans now, I think they are fine so long as you have a bit of space you know.

I. Okay thank – you very much indeed

Memo::

MRMALE5(2A)

..1.1age

Age: 44

..1.2 previous scan

I. You have just had an M.R scan; was that the first one that you have had?
Yes it is

18.Symbolic Significance

I. I am going to show you a photograph now and I would like you to tell me the first thought, or word, that springs to mind (show photograph of M.R scanner)
A big hole (laughs)

21. Moulding Preconceptions

I. Can you tell me what you were expecting to happen today?
Ehm I a lot of people had said to me before I came that you get put through this great big hole and you feel claustrophobic, I 'm not normally a claustrophobic person but when I saw it (scanner) I thought, well first of all am I going to fit in it? (nervous laugh). Then I wasn't sure how far I was going to be inserted into it so I realised that I was going to be face up, I mean if I had gone in that far (indicated to the level off his chest) that might have been a bit more uncomfortable but I' d have coped with it because I realised it would only be for a short time.

3.expectations
24. Orientation

..description
15.Communication

I. Can you tell then exactly what people said to you before you came, did the doctor or anyone in the clinic give you any indication what was going to happen?
No, it wasn't explained to me, it's only people who have experienced one before said, " I was inserted into this machine, one minute I am lying on the bed, the next I am inside this machine, I felt as if everything was on top of me". But no one mentioned about the noise, I mean the noise in particular didn't worry me. Ehm it tends to be repetitive like a resonance noise it is, but after a while it gets on your nerves.

21. Moulding Preconceptions

I. Was it just one person that told you these stories or a few?
A couple of people yes, some not even related to the fact that I was going for the M.R scan, it was just a matter that has been discussed in the past. Some have said they have been for an M.R scan and I've asked them about it, you know over a period of time. Since I've been given my appointment somebody said to me "Oh I've been for one of them, it wasn't a nice experience"

5.Information

I. Did you get some information through telling you what was going to happen?
I did

2.concerns

I. Was that useful?
Yes it was useful

..description
21. Moulding Preconceptions

I. Who do you believe then, do think a bit of both, is there some substance in what you have been told by your friends?
Ehm, probably a bit of both, because I mean at the end of the day the article is there to be able to do away with my fears; so they are not going to tell me that you are going to be stuck in a great big hole and the whole world is going to cave in on you (laughs, laughs) At the end of the day it's sorted me out and that is the net result.

27.Compliance
25. Technological association

I. I realise that yeh, okay, so you walked into the room there, what were your thoughts at that time?

27.Compliance
25. Technological association

35 I was trying to look at the machine thinking about my first impressions of the machine, I was trying to work
36 out the length and depth of it, working out whether I would be able to go through it (laughs)

21. Perceptions of the radiographers
11.recommendations

37 **I. Did you understand the instructions that you were given in the actual room?**
38 Yeh apart from the mechanics of how it actually works, ehm, I mean that sort of thing is just from a purists point
39 of view, I want to know everything me. I also think that sort of thing helps people to understand, I mean not
40 everyone, but some people if they get told the mechanics of what is happening in simple terms it sometimes helps them to allay any fears.

21. Perceptions of the radiographers
2.concerns

41 **I. That's a very good point. What were your thoughts while you were inside the scanner?**
42 Ehm .. I was just thinking..first all I thought I'll have a nice little sleep, but that was before that awful noise
43 started (laughs). The lady (radiographer) said to me that I'd be 15 minutes ehm and she said you will hear
44 some noise, but I wasn't even with the ear plugs, ehm expecting anything like that, it was the depth of the
45 drone and I suppose I was thinking to myself, why do they have to have the noise? You know I was asking myself,
46 what's the noise for, is it for a purpose? ehm or something that they haven't scientifically overcome yet.
47 At one point I did wonder if it was working properly. I mean I didn't know whether it worked off resonance from
48 the bones or what really.

12.satisfaction
25. Technological association

49 **I. I will be pleased to tell you at the end. You had no other thoughts then?**
50 Once I had realised that I wasn't going to be stuck in the middle of it the feeling of claustrophobia left
51 really, it wasn't that bad.

14.analogies

52 **I. Was the whole experience similar to anything else that you can think of however strange or bizarre?**
53 Ehm I once went pot holing and we had to drop through a water plug hole which was only about 10 foot in length
54 into a lower chamber, we were on a rope, but it was a similar sort of feeling to that, ehm unexpected and the
55 fact that you have gone into a tunnel. Later on we had to lie on our backs in the tunnels and the rock face was
56 right up to your face and you had to pull yourself on your back so that is the closest parallel that I can
57 draw.

13.your explanation

58 **I. Okay, thank-you. If now you were going to explain that scan to say a member of the family, what would you say to them?**
59 I would tell them to stop worrying it's basically that you're inserted into a tunnel and you just lie on your
60 back and a bit of noise (laughs)

6.knowledge

61 **I. We have mentioned this before and we will come back to it, have you any idea how it works?**
62 Not really, I was trying to work it out while I was lying there, I wondered if the noise was vibrating the
63 molecules inside my joints and taking pictures but other than that no.

6.knowledge

64 **I. Do you think it uses x-rays or?**
65 Only from little snippets that people have said, It wasn't x-rays ehm and taking into account that none of
66 the staff wear protective clothing, like they do in the x-ray department, I assume its

6.knowledge

not x-rays.

17.Coping Strategies

I. Did you know the radiographers weren't in the room with you?
Yeh they gave me the buzzer if I had a problem.

11.recommendations

I. Have you any recommendations that you could make that would make the whole experience better?
Well, only just as I said, if on the literature they could give a brief explanation of how it works and what it does to come up with the end result. At the end of the day they may or may not read it but for those who are interested in that sort of thing it may allay fears.

9.other radiology

I. Have you had any other scans or x-rays?
No just x-rays, the barium meal type you know I felt blown up and it was a bit undignified.

23. Self

I. You mean a barium enema?
Yeh that's it, okay really.

This gentleman claimed that he felt warm in the scanner and his body vibrated with resonance of the scanner.

MRMALE6(2A)

..1.1 age

Age: 74

..1.2 previous scan

I. Can I just ask you to begin with; was that your first scan, MR scan?

Yes

18.Symbolic Significance

I. I am going to show you a picture in a moment and I would like you to tell me the very first thought that comes to mind (show picture of M.R scanner)

Underground, it reminds me of the subway you know

12.satisfaction

3.expectations

I. Can you tell me what you were expecting to happen today?

Well I don't suppose it was anything very different, I mean I didn't know that it was going to be so noisy like a pneumatic drill or a pneumatic puncher, I couldn't understand that but ehm ... I expected to be closed in.

5.information

I. When you were told that you needed a scan were you given an explanation at that time?

No not really no, I found out what M.R stood for.

21. Moulding Preconceptions

I. Right where did you find that out?

From the desk here (in the scanner department) Magnetic Resonance

..description

I. So you made a point of asking at the desk?

Well yes, I did because I wanted to know what that was and I wanted to know what C.T meant as well, because you know before I got here, I didn't know whether I was going to have an M.R or C.T (concerned expression)

..description
18.Symbolic Significance

I. Okay, can you tell me what your thoughts were when you went into the scanner room?

Ehm .. well I thought it was interesting, I thought I have seen these things on television so this is my chance to experience it first hand as it were.

4.feelings
12.satisfaction

12.satisfaction

27.Compliance

I. Can you recall your thoughts when you were inside the scanner?

Yeh, I thought it was a bit closed in, and I thought it's a good thing that I'm not claustrophobic because this could be a very scary position to be in, and it would be for some people I would imagine. When I was in there I was fairly relaxed, I was, you know... I was more bored than alarmed that... I was thinking that I didn't want to sneeze or get taken short or anything, I suppose I could always go to the bathroom and come out by pressing the buzzer but that would be chickening out. But I thought of escaping from a prison camp where they went through a tunnel like that and I thought I think I'd rather stay in captivity thank you.

17.Coping Strategies

14.analogies

I. Is that whole experience in there similar to anything else you can think of in life, however strange or bizarre?

No that's a one off, completely unique

14.analogies

13.your explanation
14.analogies

I. If someone else in the family had an appointment for an M.R scan, how would you explain it to them?

Well I would say, because most of us are keen cyclists, imagine an exhilarating bike ride with the sun in your eyes and the wind streaming past you and the feeling you get with that. well this is the very opposite, it's none of them things absolutely none of them (laughs) and you feel very powerless of course. You think, I hope they

4.feelings

Perceptions of the radiographers

13.your explanation
20. Perceptions of the radiographers

35 are on my side out there because if they had anything against me they couldn't
36 half pay me out, there is
37 nothing that you can do, you couldn't even extricate yourself. I'm not paranoid, &
38 it's just as well really.

20. Perceptions of the radiographers

37 **I. Did you realise that the radiographers weren't in the room?**
38 No, I wasn't sure where she was; I wasn't very bothered I assumed that we were
39 contact. I lost all track of
40 time, I was told it would take half an hour and I was trying to work out how long it
41 had been. I mean when I
42 came out I thought, well I suppose that was half an hour, it could have been 20
43 minutes or for all I know, I don't
44 think it had been longer, it certainly didn't seem longer than half an hour I must
45 admit.

6.knowledge
25. Technological association
18.Symbolic Significance

42 **I. Using your own words, I don't expect any technical details, can you
43 explain how that machine works or what it does?**
44 No, no indeed and I am quite baffled to know why it is so noisy, I would expect an
45 electrical wooring or humming or
46 something but I didn't expect anything so apparently physically threatening as that
47 da, da, da, da. So that
48 was a great surprise, yes that was something quite unknown and I had no idea
49 that would happen.

6.knowledge

50 **I. Do you think it uses x-rays?**
51 Do I what?

52 **I. Do you think it uses x-rays?**
53 No I wouldn't ...I wouldn't .. I don't suppose it did because I didn't touch any plates
54 or anything but I would
55 have been just as wise, but it's a lot bigger than x-rays of course.

9.other radiology

56 **I. Have you any recommendations as to how we could improve the whole
57 experience in the future?**
58No I can't myself think of anything at all.

59 **I. Have you had other x-rays?**
60 Oh yes

61 **I. Have you had any particular problems with them?**
62 No I don't think so, no, no

63 **I. Okay thank you very much indeed.**
64 What is C.T by the way?

65 **I. (Explanation given)**
66 Oh right I see thank you very much.

MRMALE7(2A)

..1.1age

Age: 32

..1.2 previous scan

I. Was that the first scan that you have had?

Ehm third

..1.2 previous scan

I. Third, right so you are getting used to them now are you?

Well the first one was a brain scan and the second one was also a brain, so that's the first time I've ever had one on any body parts, see.

18.Symbolic Significance

I. Okay then, I am going to show you a picture now and I would like you to tell me the very first word, or thought, that comes into your mind (show picture of M.R scanner)

Brain scan

3.expectations
2.concerns

I. Okay, so can you tell me what you were expecting to happen today?

Well, I wasn't expecting anything really, I only thought I was coming here to have x-rays, ehm I knew I was going to have some sort of a scan, in a magnetic field, but it didn't really dawn on me that it was going to be the same sort of scan as the brain scan, you know.

2.concerns
5.information

I. So even though you have had 2 brain scans you didn't associate them with what you were coming for today?

Yeh that's right, yeh

7.misconceptions

I. Did anyone give you any explanation?

Well, I've been for two scans the first one was an electronic muscular ehm.. and I automatically assumed that it was a scan that you get when you are having a child, you know the..

3.expectations

I. Ultrasound scan?

Aye, yeh the ultrasound scan that's what I thought, yep.

12.satisfaction

I. So you weren't expecting this at all?

No

25. Perceptions of the radiographers

I. What were you thoughts then when you went into the room?

Nothing, no fear or nothing.

10.reaction in scan

I. Did you fully understand the instructions given to you in the room?

Yeh, the staff have been brill.

12.satisfaction

I. Were you thinking of anything in particular while you were in the scanner?

Ehm my eyes were closed I was trying to have a sleep, I work 14 hour shifts so.....

25. Technological association
15.Communication
14.analogies

I. Really, so you enjoyed the break then?

Oh yes, definitely

10.reaction in scan

I. Did that whole experience in there remind you of anything else in life, however strange or bizarre?

Just about to jump out of a plane at 3,000 feet

I. Oh why do you say that?

You feel all enclosed and then just as you are about to get out you see the sky and you goit's a relief to get out of the machine. It's monotonous being in there because there is no time, no conversation between anybody, so when you are in there you don't know how long you have been in there for. The first question you ask is how long have I been in here for? How long does this take?

I. So are you saying that you loose track of time in there?

10.reaction in scan

Basically yeh

19. Isolation
14.analogies

I. Were you aware that the radiographers weren't in the room with you?
Yeh, I heard the door slam it's like being in jail. Not that I've been to jail mind you (laughs).

13.your explanation
14.analogies

I. (laughs) No, okay if you were to describe this procedure to some else in the family, say someone else was coming along, what would you say to them?
Well, stick your head in the washing machine, don't turn it on, and stick your stereo headphones on.

6.knowledge

I. I don't need any technical terms for this, but have you any idea how that machine works or what it does?
That's when you are in there you do wonder what is going on and what it's doing on the outside, where does the noise come from, why does it make the noise? I thought it was like an alternator on a car, obviously you have the inners and outers of an alternator. The outside spins theoretically, I didn't know to break that down you have got to have skill, when you get outside you mean to ask, then you forget and you go home.

6.knowledge
4.feelings

I. So you were questioning the mechanics of the whole process?
Yeh, that is what I was thinking because of the noise, you know you get like certain individual noises, you get like a tapping noise and then you get a continuous noise. The continuous noise in there (scan room) is quite loud at first, and then it turns into a hum and then it almost goes into like a musical sound like, and finally continuous humming which tends to drift you off.

11.recommendations
5.information
4.feelings

I. Have you any recommendations that.. I mean you say that you weren't given any information, did you not get any information through?
I did yeh, but I mean to be honest with you I.. I..with the hours I work, like 14 hours a day I just well didn't really read it. I just looked at the day and said to work that I've got to have the day off and booked the day off and take whatever I get like.

20. Perceptions of the radiographers
11.recommendations

I. Is there anything that you could recommend that would improve the process?
No not really, the staff tell you everything you need to know, they tell that it will be noisy and that the cotton wool put in your ears is not going to stop it, but it will definitely help to numb it, and they make you comfortable and explain that they are not going to be in there, I don't think there is anything else they could do; apart from T.V like, but it is the NHS.

I. Did you feel much different when you had the brain scans; was it on the same machine?
Yeh the same one, a bit more restricted, but much the same. I need to go if that's okay?

I. Of course, thank- you very much indeed.

1 MRMALE8(2A)

2 Age 53

3 I. You have just had a scan, was that the MR scan?
Yes it was an MRI scan

4 I. Was that your first scan?
Fourth

5 I. I see so you have had a few then ?
2 CAT scans and 4 MRI scans in total

6 I. Right, I am going to show you a picture now and I want you to tell me the very first word that comes into your mind. If I show you that [show photograph] what would you say, first word?
Front of a washing machine.

7 I. Okay that's fine, obviously you knew what was going to happen today because you have had them beforehand....
Expect for the injection and the fluid in the hand.....

8 I. You haven't had them before?
No

9 I. Right, when was the first one you had, was it a while ago?
No not so long ago, I can remember it.

10 I. Can you remember what you were expecting to happen?
Basically that it was ehm going into like this tube which I had seen from the outside, which I had felt a bit claustrophobic about...

11 I. Where had you seen it?
On the T.V and stuff, yeah..

12 I. Okay I see
Ehm but once the staff had talked me through it, I mean what they did was they put me in it [scanner] a bit at a time and then back out again until I got used to it. They got me out, put me back in and just talked me through it, they told me to keep my eyes shut and I was okay and that is what I've always done.

13 I. You said earlier that the picture that you had in your mind from the T.V made you feel claustrophobic is that correct?
For the first one, yeah I was a little bit apprehensive about it, yeah yeah

14 I. You were given instructions in the room, were they clear?
Oh yes

15 I. Can you remember what your initial thoughts were when you went into the scanner?
Just trying to think of something to take my mind off it while I was having done really. I was just thinking about family really and things like that...then of course the noise is starting and you wonder what the heck is going on, but once you have had one it is not a problem. But with first one, I thought about what I am doing and is happening to take my mind off it.

16 I. So the experience of the scan, was it similar to anything else in life, however strange or bizarre?
No not that I can think of, I mean it's not like anything else. Some people that have had it say that there is

14.analogies
21. Moulding Preconceptions

nothing to it and other people that haven't had it try to say, "You wouldn't get me in there for a big clock"

20. Perceptions of the radiographers
17.Coping Strategies

I. Did anyone tell you before you came the first time ?

No, initially I was just a bit scared if you like, but once you have been in it ..you see the staff [radiographers] were brilliant, they put you in, bring you out and just reassure you. They give you the buzzer as well so there isn't a problem.

11.recommendations

20. Perceptions of the radiographers

I. If you were going to explain the procedure to another member of your family, what an MR scan consisted of, what would you say to them?

Well obviously it's to take a bigger picture and a more detailed picture than an x-ray, so basically it's a case of trying to relax and listen to the staff, as soon as you are in, then you are out again. They shouldn't have a problem since the staff will talk them through it and the noises and vibrations but there is not a problem once you know what is happening. It's like today I asked the lady in the room why I had been called back since I had a scan a few weeks ago. She said that she would put me in for part of the scan, take me out and give me an injection to make a clearer picture. So once I knew everything was sound. I mean I am not a hospital person, I have never been in hospital in my life, I don't take kindly to hospitals you know, I have a bit of a phobia about them but this time this scan didn't bother me at all.

20. Perceptions of the radiographers

..description

I. So are you saying that the best way to deal with this is for the staff in the room to talk you through it at the time?

Oh without a doubt, they sent me the information leaflet and things as well.

..description

I. Did you find them useful?

Yeah in some respects ((hesitation)) you're reading the stuff then getting here and going through it is a different thing isn't it.

6.knowledge

I. Okay, can you tell me in your own words how that scanner works and what it does?

All that I know is that it is a magnetic image but that is as much as I know about it, it's like a giant magnet isn't it?

I. Do you know what it does?

No I don't know about the vibrations of it or anything like that, I don't know what the purpose of it is fella.

I. Right, the first time that you went in did you find the noise a distraction?

No other than trying to understand why it was so noisy and should it be so noisy no.

11.recommendations

I. Have you any recommendation that would help patients in the future coming along for a scan?

Not really, each time I come the staff go through the same procedure, so they put you at ease, and I think that it is the biggest problem. Especially in my case not being a hospital person they managed to talk me through it. Each one I've had since the first one has been fine because everything has been explained to me. It hasn't been a problem coming back for the others.

9.other radiology

I. How did you find the CT scans?

Just the same really, I think once that you have been in you are okay the next time.

25. Technological association

73 **I. Easier than MR?**

I think so

74 **I. Why would that be?**

75 Oh god I don't remember them all ((laughs)) they were quicker and not as noisy as
76 the MR because that noise
77 does make you wonder what is going on and of course the different little sensations
that you are having.

78 **I. Do you remember your first CT scan?**

79 To be honest no I get them mixed up in my mind a bit now.

80 **I. No problem we can stick with MR. Have you had any other x-ray
investigations?**

81 The only other thing that I have had done in relation to this injury is an epidural but no
82 other tests or x-rays.

83 **I. Okay, that's fine thank you very much indeed. I appreciate your help.**

1 **MRMALE9(2A)**

..1.1age

2 Age: 75

..1.2 previous scan

3 **I. You have just had an MR scan was that your first one?**
4 First one I've ever had yeah.

21. Moulding Preconceptions

5 **I. Can you tell me what you were expecting to happen?**
6 Not really, only what I've heard off other people....

21. Moulding Preconceptions

7 **I. What have you heard off other people then?**
8 It's very traumatic when you first go in, you go in the tunnel, and that is all.

10.reaction in scan
4.feelings

9 **I. Did you find it was?**
10 Yeah, when they put the mask on my head, I mean I've had nothing like that before.
11 You can't move you know. I
12 was a bit worried and also I was thinking of the people who were claustrophobic,
13 you know. The thing is I closed
14 my eyes and the feeling went off, it went off and that was it.

17.Coping Strategies

17.Coping Strategies
23. Self

13 **I. So that helped did it, closing your eyes?**
14 Yeah it did. I imagined I was somewhere else.

5.information

15 **I. Were you given information beforehand about what was going to happen?**
16 No not really I don't think, I got the forms and no real information.

5.information

17 **I. There would have information sent out with your appointment, did you read that?**
18 Well the wife always reads all my mail; she does all my writing and everything. She
19 must have read it for me, I
20 cannot remember the details now though.

20. Perceptions of the radiographers

20 **I. No that's fine. Did you understand everything that was explained to you in the room?**
21 I did.

14.analogies

22 **I. The whole experience of going in there and having the scan, is it similar to anything else in life however strange or bizarre?**
23 **strange or bizarre?**
24 No I shouldn't think so, it's only like going to the dentist. It's just like going to the
25 dentist and having
26 your teeth taken out. [Very philosophical attitude]

19. Isolation

26 **I. Were you on your own in the room [he was]**
27 There was someone there, I believe so, I couldn't see anyone. I had my hearing aid
28 out and that was that.

12.satisfaction

28 **I. Did you not wonder what was going on then?**
29 No not really.

30 **I. You are very trusting ((laughs))**
31 ((laughs)) I am that, yes very trusting.

32 **I. Can you remember what you were thinking about while having the scan?**
33 Nothing really, no.

34 **I. Nothing in particular?**
35 No

26.Memories

36 **I. You say that you felt a little claustrophobia, have you felt that before?**
37 No, it was only for the first say 10 minutes and I have never felt that before, no.
38 Only at the dentist when he used to put the mask on, you know.

39 **I. The gas you mean?**

26.Memories 40

[nods in agreement] It's a few years since I had that done; it's all done with a needle now isn't it?

26.Memories 41

I. When would you have had that done last? [any connection to earlier emotions]

42

Oh a long time ago, may be in my twenties or late teens I think.

43

I. If you were now to explain that procedure of the scan to someone else in your family, what would you say to them?

44

13.your explanation 45

It's hard to say, I would tell them it's a bit frightening first going in and your head is restricted

46

with that cage going over your head, but otherwise there is nothing. I know now if I ever have another one. I've

12.satisfaction 47

heard about all these scans and what a great thing they are.[not explained further]

48

I. Oh yes

49

I've heard about people going in, you know, they've never spoke or told me what they have gone through. I had a

21. Moulding Preconceptions 50

2.concerns 51

sister in law and she told me, she had a scan, she kept very quiet about it but she didn't like it, said she wouldn't have another.

52

[Porter arrived so interview was terminated since patient was required to attend the clinic]

MRMALE10(2)

Age: 41

..1.1 age

I. You have just had an MR scan of your head, was that the first scan that you have had?

..1.2 previous scan

No it was my 4 th scan between another hospital and here, in fact 2 in each.

I. Okay, the first thing I am going to do is to show you picture of something and I would like you to tell the very first word that comes into your mind. ((show picture of MR scanner))

18.Symbolic Significance

Scared.

18.Symbolic Significance

I. Why scared?

Because I am claustrophobic and I don't like small spaces and obviously it's so small it really scares me.

2.concerns

I. Have you always been claustrophobic?

I think so..I think so

2.concerns
23. Self
4.feelings

I. Can you remember back to maybe the first time, was there a particular incident that you can recall?

No nothing I can remember, I mean I have always had a fear of being buried alive so I suppose that it has a lot to do with it really. I think there must be somewhere where it started but nothing specific.

3.expectations

I. So can you tell me first of all what you were expecting to happen, I know this is your 4 th one, so you must have had a good idea, but just tell me what you thought was going to happen today?

I think the same as normal, it's like an x-ray taking pictures of my brain which gives them a clearer picture of what is happening with this aneurysm, so yeah pretty much what I expected.

3.expectations
25. Technological association
2.concerns

I. If you can remember back to the first scan, can you remember what was going to happen then?

I didn't have a clue, I didn't know what an MR really was, I wasn't aware that there was a machine like that one ((points to scan room)). I expected it to be bigger, well less claustrophobic anyway. The first scanner was a huge older one with a tiny space ..it was even more petrifying than this one ((long silence)).

25. Technological association
23. Self

I. In what way is it petrifying for you?

Because of the small space you are taken into, if that was taken away there would be no problem. As it stands that's hard, I do get very anxious weeks before and not just the day before, I work myself up to it.

20. Perceptions of the radiographers

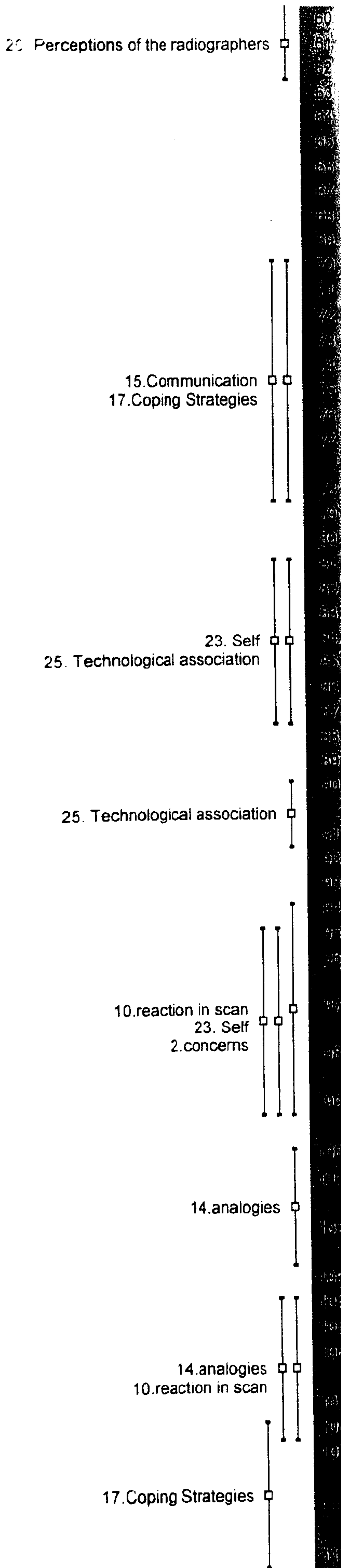
I. You were given an explanation in the room about what was going to happen, did you understand everything?

Yes, no problems

20. Perceptions of the radiographers

I. Again, if you can cast your mind back to the first scan, did you understand everything then?

To be honest yes, they spoke me through it even when I was in the machine, ehm I asked this time not to because the longer I think it is going to be the worse I am. So if they say it is going to be between 30 -40 minutes, which to me is a long long time to be in



there, but normally it is shorter than that, never that length of time. I have learnt that now, after the third one I learnt that..

I. You learnt what, not to ask for the time?

Yeah because it doesn't actually take 40 minutes, I don't know how long it took today, normally it takes about 20 minutes.

I. Sorry just to be clear here, you specifically asked not to be kept informed of the time ?

Yes, because sometimes the staff give you more over [time] than more under, which is quite right, so that you know that you might be in for that length of time. However if you are claustrophobic and scared of it you don't want to hear that. Perhaps they are better off saying that it could be about 20 minutes it could be 30 minutes or ask the patient if they wish to know how long they are going to be in for.

I. Can you then tell me the story of your scan, what are your thoughts and experiences while lying inside the scanner?

Well I build up to for a few weeks, as I've already said, ..obviously it's the small space, it's not actually what they are going to find again; my total anxiety is over the small space going into the machine and that is it fully.

I. So you more concerned about the technology rather than the outcome?

Absolutely.

I. So what goes through your mind?

When I am in it now? That's quite hard I try to think of everything to try and make myself feel a bit better..ehm and all of a sudden you can feel yourself thinking that...you can feel yourself getting to panic ((long pause)) luckily this time I did okay. I didn't the last time I was on this scanner, I had a panic attack and had to come off. Today was actually an improvement, but it seemed like an eternity in there..and the noise is awful.

I. What does that remind you of?

Well I think that if ever I was going to go into a loony bin and they were going to play music non stop, bum, bum, bum and you are helpless to do anything about it, that's what it reminds me of.

I. Right, so that bad?

I would describe it as torture, although it is not physically hurting you, it is physically scaring you. So the noises are bad.

I. I noticed that your wife was in the scan room with you today, does that help you much?

Oh yeah, that helps a lot, I don't think I could contemplate going in on my own, my partner has always been in there with me for every single one.

19. Isolation
18.Symbolic Significance



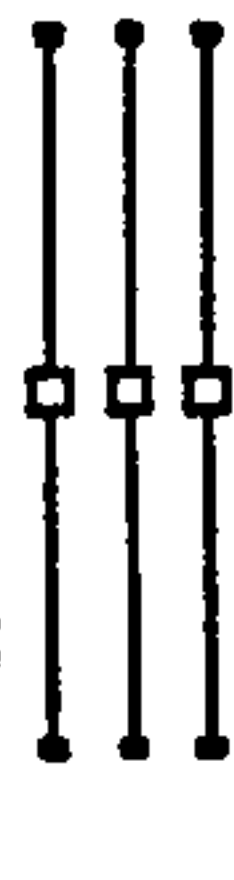
I. Is there an element of being isolated, is that why you feel that you need someone with you?

Yes, completely; the mirror helps, now they don't do that in the other machine [older MR scanner] obviously because this is a newer machine but the mirror does help. I close my eyes...I never look at the machine when I go in by the way, I never look at the back of it, never..that's the first picture that I have ever seen [refers to picture of the MR scanner shown earlier in the interview]

I. Why is that?

Because I don't want to..

18.Symbolic Significance
23. Self
21. Moulding Preconceptions
24. Orientation



I. So you have never looked at the machine?

No I may have seen it quickly on the television on the odd occasion. I saw one the other day and it scared me even more getting ready for today. I never go in and look at the back of the machine I just look at the table.

24. Orientation
25. Technological association



I. So you make a conscious effort not to look at the scanner?

Yes definitely..ehm it would really panic me ((long pause)).

17.Coping Strategies



I. You shut your eyes?

I go inside, now because the mirror is there, I open my eyes slightly to check that my partner is still there.

18.Symbolic Significance



I. What can you see in the mirror?

Well I can see my partner; the first time today I have ever noticed you can see the radiographers so that's good.

20. Perceptions of the radiographers
17.Coping Strategies
19. Isolation



I. So up until today, did you know where the radiographers were?

No I just concentrate on my partner because as I said last time I actually did have a panic attack. I was actually feeling fine for 5-10 minutes and then all of a sudden it just ...I really panicked badly, I pressed the alarm and they let me out. Yeah today is the first day that I noticed you could see the radiologist [radiographer] and I never ever look above me or around me, ever.

17.Coping Strategies
23. Self
15.Communication



I. Why

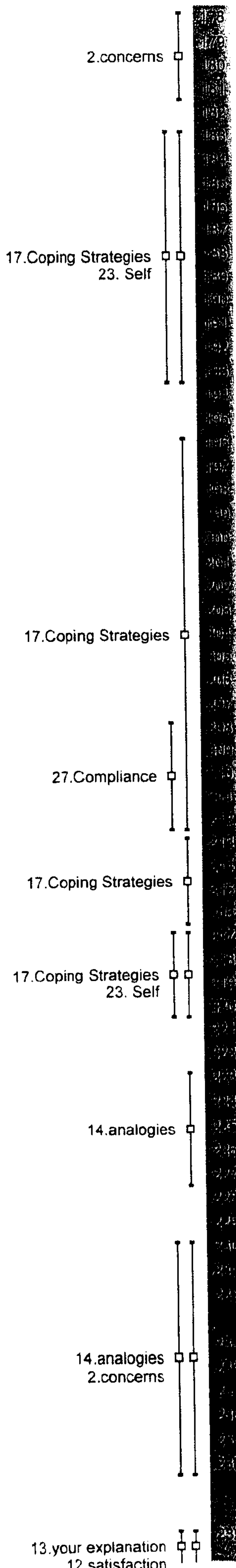
I would panic, so all I do is open my eyes very quickly, look in the mirror and close them up again. I check my partner is there and then I am usually okay. I looked for the radiographers this time since I could see them in the mirror, but I don't know what made me look this time. I think I might have done it for a reason actually...I was kind of hoping that she would get up, and then I thought if she gets up she will be coming to get me out. That's a couple of reasons why I looked for the radiographers.

17.Coping Strategies



I. So you were looking to see if she was on her way to let you out?

Yeah, there were two of them in there, I was just hoping that I could see them and one had left the room.



I. What else were you thinking about?

Ehm I just want to get out, I have got to get my mind away from thinking that I am getting scared of the space..

I. How do you do that?

I think of everything, I think of my daughter, she has a disability, like today I thought well if she is strong enough, and she is a good kid of only 7 ;then I can do it. I think that actually helped me today, thinking of things like that or anything.

I was listening to music a bit more, I was trying to concentrate on listening to the words and I am trying all the time to take my mind away from the machine. I can only do this for about 15 seconds and then it comes back again.

I. So then do you have to think of something else?

Something different

I. Some people say they count while having a scan since they loose track of time, do you loose track of time?

Ehm I don't loose track of time and I don't count, I think if I counted, it would make me worse because a minute can be quite a long time. So all I keep thinking is that hopefully 2 or 3 minutes are now gone. What I did today, which is normally different, I thought, well the longer I am in here now, the less time I have to finish. So that helped. I thought if I panic now I have to go out and they will have to start the whole thing from the beginning again, so I may as well carry on and I was determined this time.

I. Did you take anything before the scan to help you?

Yes, I took diazepam.

I. Do you have to do that for anything else?

I am a very stressed person in any case but no not really no. Getting through this scan is the only thing that I take it for.

I. The whole experience of having a scan, is it similar to anything else in life however strange or bizarre?

...No it's on its own there is nothing to compare where you can feel so trapped...
((long pause))

I. People talk about being trapped in coffins, tunnels, or being inside the womb, do any of those analogies ring true with you?

No, the worry I always have is the fear of being buried alive, I still have nightmares about that. Also I fear being trapped, I don't use the lift in the hospital, only on rare occasions, I prefer to use the stairs. I just don't like to be somewhere where I can't get out, especially on my own.

I. If you were going to explain the procedure to

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13.your explanation	□	244
12.satisfaction	□	245
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2.concerns	□	249
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25. Technological association	□	254
21. Moulding Preconceptions	□	255
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22.Stories	□	269
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someone else in the family, what would you say to them?

Well I wouldn't tell them the way that it really is because it would scare them, so I would have to say to them that it is not as bad as it seems, I have to try and help them because if I was being honest with them it would scare quite a lot of people. I would try and say it doesn't take that long, lie back and try to relax, that is probably the best way. If I was to tell them honestly, I would have to say that it is quite petrifying..

I. And if they said, what do you mean by that?

Small, limited, I wouldn't tell them how scared I am, not everyone is scared of the same thing. It is what other people have told me, sadly, that has made me worse.

I. Can you tell me about it?

Well there was a lady who had it [scan] six times when I was going for mine.

I. Which lady is this?

The one at reception there, you know booking me in and doing the files.

I. The receptionist?

Yeah, we were only conversing. Anyway she had had six scans and of course I am already petrified coming in here, she said 'It's awful isn't it, the space, you cannot move.' I thought I could without that. Then last Friday I saw a new scanner being put in somewhere in Wales and they showed a lad going into it. I tell you I could have done without that, especially since I was due to have this today.

I. Has anyone else mentioned this to you?

No nobody else. I felt better today so whether or not the tablet helped me, I don't know. But it did seem a lot longer, I don't know whether the radiologist here wanted to have more shots or something? I thought it would never end.

I. So how did you feel about the comments made by the receptionist?

Oh I don't want to get her into trouble or anything.

I. No ,no this is confidential

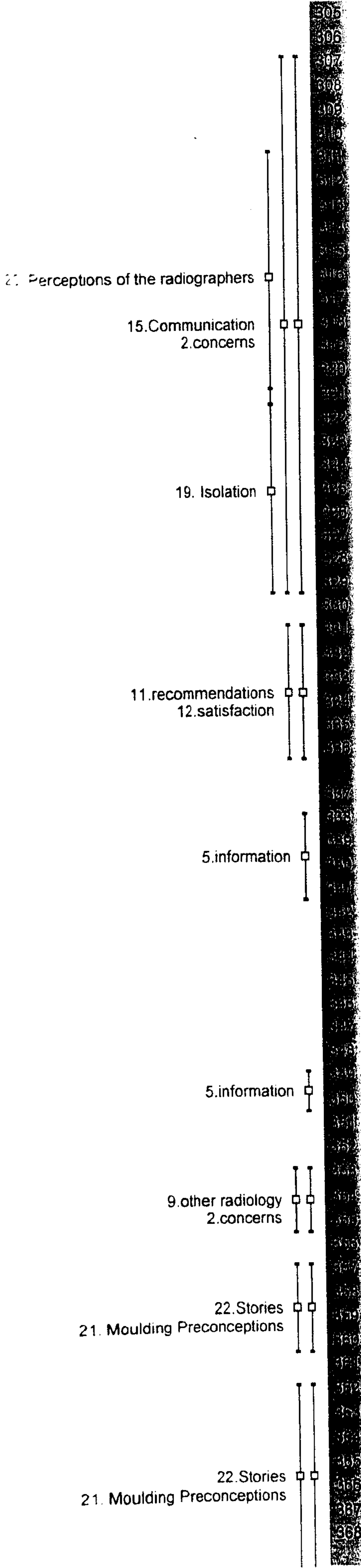
Well let's just say it's the last thing I needed.

I. In your own words, have you any idea how the scanner works or what it does?

I think so yes, roughly it goes around, I mean I've never seen it in detail so I wouldn't know. It takes pictures as it goes around and I think the dink, dink, dink ,noise is when they are taking the x-ray, that's my impression of it.

I. Does it use x-rays then?

Yeah x-rays.



I. So have you any ideas or recommendations that could help patients in the future?

What would help me would be to be talked through it, not told how long it will take, just constant talk about other things. I don't know if the lady [radiographer] misunderstood me today, I said to her that I didn't want to know how long I would be in there; I think she assumed that I didn't want to be told anything at all.

What I really wanted was to be told every now and again, 'you are doing fine, it won't be long, are you alright'. Those words are very comforting, I think they must have misinterpreted me today, I felt pretty much alone there.

It was a good job that my partner was there to reassure me and touch my leg so I knew she was there. So it does help to talk, as long as it's not the time factor, to someone like me being in there 5 minutes is an awful long time. Even if she had told me we were on the last scan that would have helped but I got nothing back today.

Of course a bigger machine ((laughs))

I. That is being dealt with by open MR scanners.

Oh that is good. Ehm.. less noisy and that thing that gets put over you [head coil] that makes it worse.

Today seemed like an improvement, I didn't seem as squashed in as I normally do. They didn't do the scan as tight and it was much better.

I. The information sent to you in the post, was it helpful?

It wouldn't matter what it said to be honest, it could say go for a scan at such and such, it could be nice, it wouldn't make any difference to me. I know what I'm going for, I know what I'm ... I think if it had been a first letter.. I don't know, I may feel different about it. For some people too much information isn't what they want, people like me, but now I have had a few it wouldn't make any difference to me.

I. Did you read it or not?

Ehm..no I didn't.((laughs))

I. Have you had any other scans or x-ray tests?

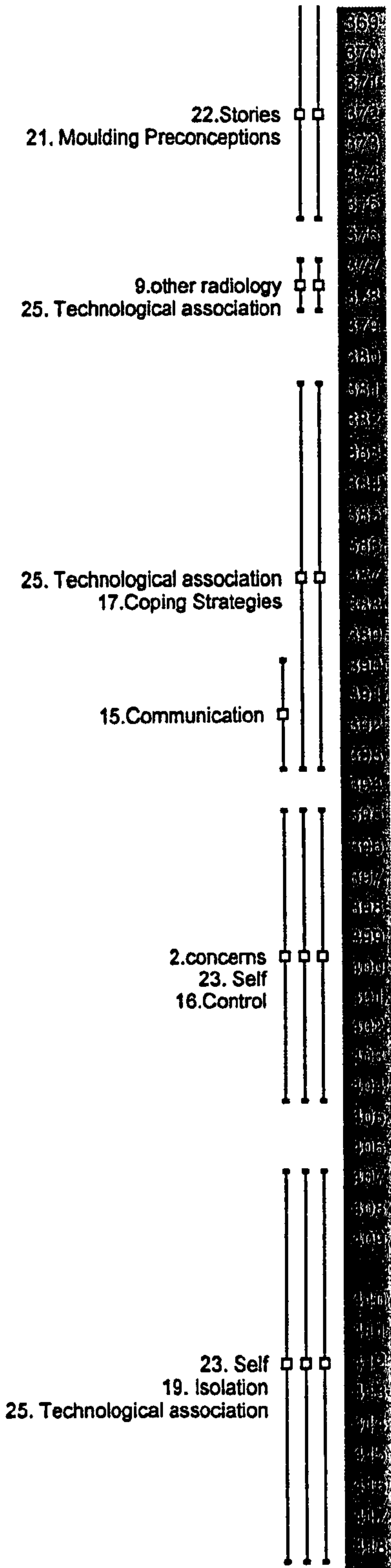
Well I've had an angiogram, that was an absolute nightmare, I hated it, it was scary.

I. Can you tell me why?

You have injections into your groin and the dye going up [contrast agent] was not as bad as I was led to believe.

I. What were you led to believe then?

Well I was told it would be scary, everyone on the ward was talking about it you see. Some patients were saying how awful it was and the after effects from the bruising can be minimal to absolutely all over the body, everyone is different. So that worried me quite a bit before I even went down. I found the angiogram



bit when they went in the groin fine, the dye was okay and luckily for me I didn't bruise easy. But the worst part of it was the lying down for 6 hours, I hated that.

So the angiogram wasn't as scary as people made it out to be, but it is still something that you don't want to go and have on a regular basis.

I. Did the machinery bother you?

No I wasn't even aware of that, nothing like today.

I. So let's just say you are about to have another one of these scans, and I have no idea whether you are going to or not, will that worry you?

I will need another, and yes it will. It won't change until the machine changes, I will always be afraid. The only thing people can do is make it easier for you while you are there. If I was to come in here straight through the door and the lady [receptionist] hadn't said anything to me I would have been better.

It would have helped if they [radiographers] had communicated a bit, like they normally do. It's a big machine, a noisy machine if they don't speak to me I don't know if they are there.

I. So presumably you were worried?

Very, I mean what will happen if anything goes wrong, can you get out? That's what worried today. When I came here today the machine wasn't working so to me that really does make me even worse. So when I did eventually go in, all I kept thinking about was, well, what will happen if the machine does not work and I am stuck inside it. I did ask the radiographer if that happened would they be able to pull me out manually and she said yes.

I. One final question because I know you need to go now. Is this more modern scanner with the slightly wider tunnel and mirrors etc much better for you overall?

With older one, you feel on your own, you feel isolated, if you can see someone you have some idea that at least someone can help you if something goes wrong. If you are just left in the machine and they just leave the room, which they do mostly, you cannot see anything. My eyes were nearly glued together, I shut them that tight and I gripped the alarm button really tight, so I was quite bad really.

I. Okay, thank you very much indeed.

MRMALE11(2)

..1.1 age

Age:62

..1.2 previous scan

I. You have just had an MR scan of your lumbar spine, was that the first scan that you have had?

No I have had a couple, but all different variations of MR, you know different areas like.

I. Okay, I am going to show you a picture now and I would like you to tell me of the very first word that comes into your mind when you see the picture, as spontaneous as possible. [show picture of MR scanner]

Air tight

18.Symbolic Significance

I. Why do you say airtight?

Because you are in a tunnel and a confined space, packed in with no space.

I. Obviously you knew what to expect today because you have had an MR scan before, was there anything very different today compared to previous scans?

Phew! I've suffered with spinal problems for years now and I've had scans in another hospital before they did the major surgery. I've been in the mobile scan here as well.

14.analogies
17.Coping Strategies

I. How did you find that?

No different really, I just close my eyes and listen to the music and I am fine with that. I can understand that people get nervous though, it's like flying I suppose, some have a problem with it others don't.

12.satisfaction

I. Yes, I think so. Is there anything you think about in particular while you are lying in the scanner?

No not really, just thank god these things are here for people to use to get to the bottom of the situation they are in, I mean it is an asset that's the way I view it. It depends on people's nature doesn't it.

14.analogies

I. Is the experience of has having the scan similar to anything else in life however strange or bizarre?

I thought it was noisy, and for a minute or two I thought my heart was racing, but then I realise it was the noise and the vibrations not my heart thankfully. Perhaps similar to a pneumatic drill, years ago I did a job on my house and had to use the drill and get the gas people in, so that is as close as I can imagine I think.

11.recommendations
13.your explanation

I. If you were now to explain this procedure to someone else who hadn't had a scan, what would you say to them?

11.recommendations
13.your explanation

17.Coping Strategies

5.information

7.misconceptions

12.satisfaction

6.knowledge

6.knowledge
7.misconceptions

Lie back, relax, take a deep breath, close your eyes, listen to the music and wait until it is all over. Keep it simple because otherwise it can be quite frightening.

I. Do you think closing your eyes helps?
Yes I think it does because the roof of the scanner is just above you and I can imagine that might cause some people to be claustrophobic. Just close your eyes and listen to the music and there is no problem.

I. Have you read the leaflet that was sent out to you?
Yeah.

I. Did you find it useful?
Yes, but because I've had many before it wasn't too new to me.

I. Has anyone else mentioned the scan to you, a friend or anyone?
None of my family have had one, all the pregnant ladies today have one don't they? That is different is it?

I. Yeah, that's ultrasound
That's it ultrasound, all this technology that is available today that we never had before. It is wonderful and I am so glad to see them here. It creates a wealth of knowledge, it must make easier for surgeons to know where they are going in or if they are going in the dark, I guess that must help patients get over spinal operations quicker than they would normally do it; it is positive all the way along for me.

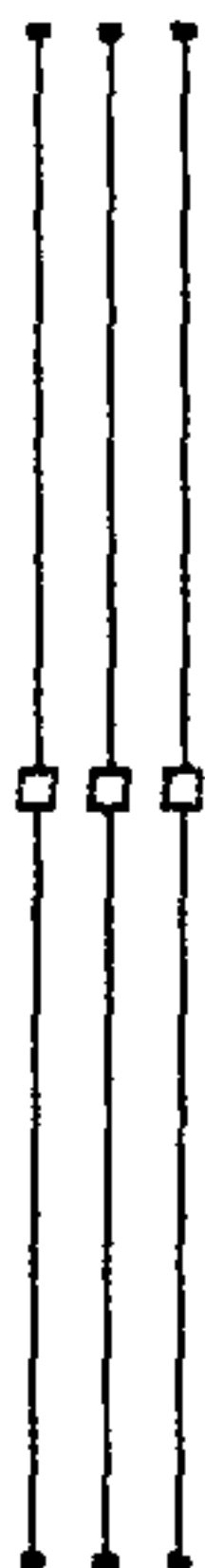
I. That's good to hear it really is. In your own words, have you any idea how that machine works, what it does?
I haven't a clue, it must be electronic, it must use lasers ehm.. it must be imaging, the engineer would know, you know whoever put it together.

I. Do you think it uses X- rays ?
Well I would imagine that it does yes, the scientific knowledge to do it is fantastic and I don't think a lot of the general public understand that. They see a machine there and they don't think about how it goes in, or the brains that has put it together, they just take it for granted. The cost must be enormous, and to use it on an old fellow like me ((laughs))

I. No, they must think you are worth it ((laughs))

Well I go back a long way

11.recommendations
Perceptions of the radiographers
14.analogies



I. Everything you have said has been very positive and that is great but can you think of anything that might help patients in the future, any improvements for example?

The only way is to tell them beforehand, before they go in I suppose, tell them they are going into a tubular thing; I don't think there is in all honesty.

These machines have been around x number of years now and I think an awful lot of people have used them... I don't see anything negative with them, the girls are fine personality wise, lovely, it is getting the combination right. The right type of staff for the right type of machine.

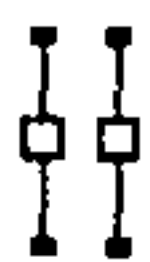
9.other radiology



I. Have you had any other radiological examinations?

Well let me get this right now, I've had discograms, radiculograms, myelograms about 3 of them.

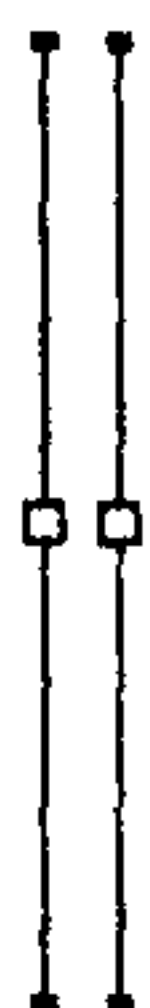
9.other radiology
2.concerns



I. How did you find them?

I didn't like the myelogram.

2.concerns
9.other radiology



I. Can you tell me about it?

The after effects with the headache, but they didn't tell me about it at the time, they just told me to drink plenty of fluid. I had the most enormous headache, I couldn't stand up. Plus lots and lots of ordinary X-rays, all good stuff- I am like the bionic man me you know ((laughs))

I. Thank-you very much for your time today.

MRMALE12(2)

..1.1age

Age: 55
(appeared reluctant to answer questions)

..1.2 previous scan

I. You have just had an MR scan for your lumbar spine, is that the first MR scan that you have had?
Yeah

I. It was, okay, I am going to show you a picture next and I would like you to tell me the very first word that comes into your mind when you see it? [show picture of MR scanner].
Green

18.Symbolic Significance

I. Why green?
The colour of it is green.

5.information
12.satisfaction

I. Fine, you have come along today for your very first scan, did you read the information leaflet?
Yes it was fine

21. Moulding Preconceptions
22.Stories

I. Did anyone else mention the scan to you, friends or family or anyone?
Yes a couple of people

I. What did they say to you?
They said it was very claustrophobic.

I. Anything else?
Not really (there appeared to be a certain reluctance to answer some questions)

14.analogies
23. Self
2.concerns

I. Can I ask you then, what were you expecting to happen?
To be entombed...

I. Did that worry you at all?
Yes. ((long pause))

21. Moulding Preconceptions

I. Was that from what other people have told you or...
Yes and I suppose unknowingly what you see on television.

3.expectations

I. So you expected to be entombed?
Yes.

I. When you went into the room and saw the equipment what was your initial reaction?
It was about what I expected.

2.concerns

2.concerns

I. What thoughts were going through your mind when you lying in the machine?

..initially panic... because I do suffer from claustrophobia

17.Coping Strategies

I. Do you?

But ..i brought my CD with me and just closed my eyes and concentrated on that.

I. Closing your eyes helps?

Especially with the music yes.

I. Did you know the radiographer wasn't in the room?

It didn't worry me.

I. Did you know where they were, could you see them?

No, no problem.

I. The fact that you were enclosed, that was okay once you were in the machine was it?

Yeah I knew that I would have to discipline myself so I concentrated on the music and it was fine.

I. Is the whole experience of having a scan similar to anything else in life, however strange or bizarre?

No.

I. Would you say it was unique?

Yes

I. If a member of your family was coming along for a scan for the first time, how would you explain it to them?

..I would just say that a magnetic pulse surrounds you, it is very noisy, prepare yourself in the best way... similar to what I did.

I. Would you tell them they would entombed as well?

No, I think I would keep that one to myself, just say you are surrounded.

I. You have already referred to the mechanics of the process ,but have you any idea how that machine works, what it does?

I think it just passes magnetic impulses through you, which resonants and from the resonance a computerised image is formed.

I. Have you any recommendations; is there anything we can do to improve the experience for patients?

No I suppose you are just hungry for the result really, but the actual thing itself, I don't see how you can improve it. The staff are very comforting... but without ..it seeming daunting

I. Have you had any other radiological investigations?

20 Perceptions of the radiographers
12.satisfaction

17.Coping Strategies

14.analogies

13.your explanation

13.your explanation

6.knowledge

11.recommendations

20 Perceptions of the radiographers

9.other radiology

MRFEM1
Age 47

..1.1age

I.Perhaps you could just tell me when you had your scan and what type of scan as it was?

Right, well I had an MRI scan on the mobile and it was about, eh well six weeks ago now, middle of October something like that. There was a 14-week waiting list,that didn't please me, but it is the same for everybody isn't it?

I.Without going into any medical details what part of your body did you have scanned?
I had my shoulder, my right shoulder.

I.Can you tell me about the experiences of the scan, perhaps starting off with the information that you received?

Umm, I didn't have a great deal I don't think, I got a letter saying that I had awell, I didn't have a letter, I had a phone call to say to go down for the scan, after waiting so long for it to come through umm. When I got to the reception they just asked some things different things, have you got this, or have you got that so that I didn't cause any problems when I got into the machine I think, or it to you.

5.information

I.So you had no other information beforehand?
No, none that I can remember

I.What happened then?

Took me through to the machine, took off any metal, they put me on the moving trolley thing and then adjusted, they wanted me to lie virtually on my side which I can't do on my, on my right shoulder so they adjusted the position slightly strapped something to it, and put me into the machine...which I wasn't really fussed on, because it was too close to my face really, and I don't like enclosed spaces, and that I didn't like it, I had to come out once because of it, but I suffered the rest. They did them[scans] in the shortest time that they could, so that I didn't have to be in there too long, but I wasn't at all fussed, I wouldn't want another one.

10.reaction in scan

I.How did you summon them to let them know you wanted to get out of the scanner?

They give you a little buzzer and if you have a problem you buzz, they will come into you, and I pressed the button and they came and pulled me out of the machine and just gave me a short while to get over it a little bit.

10.reaction in scan
2.concerns

I.How did you feel about that?

Having to go back in?

I.Having to come out in the first place

Well, I felt a bit foolish, because being a member of staff [admin] and I know it was the mobile [scanner] so that one gentleman had nothing to do with the staff but the female radiographer was, I thought, oh god they are going to think that I am a total lune, so I had to come out. I think that's why I suffered having to go back in again and eh, I was struggling, I was glad to get out.

10.reaction in scan
2.concerns

4. feelings
 10 reaction in scan
 2. concerns

35 I must admit I could have climbed up the wall. You have to lie still as well, and that doesn't help.
 I think
 36 because my head was so close to that the,.... the machine, there was just no where to go, if it
 had been my
 37 knee and my head that was out it, might have been better, but because it was my shoulder and
 my head was
 38 close to the.....well literally my nose was nearly touching the roof and I didn't like it.(soft voice).

I.What about the noise of the machine?

39 That didn't bother me the noise, no, it was just the fact that I couldn't move and I couldn't have
 got out of there

40 on my own, that's the worrying thing more than anything, that you can't get out. Because they
 had me strapped em, I couldn't move, if it had been in a normal
 41 x-ray room, I wouldn't have been bothered, but because I was enclosed in this machine..... I
 wasn't that fussed. I am alright in a room, if it was a room this
 42 size, I wouldn't have been bothered, with plenty of space around my head, but maybe the more
 you think about it the worse it becomes and then it prays on your
 43 mind and you get yourself worked up I suppose.

I.Are you normally a claustrophobic type of person?

44 Well, I can't go in a cave or anything like that, I don't like it, as I say in these rooms I am fine but
 if I was locked in somewhere; I don't how I'd react if it went on
 45 you know, if there was a window I would probably be okay, but if it was a cupboard I wouldn't
 like it.

I.How did you feel about the fact that the radiographers were outside and remote from you?

46 That didn't really bother me because the gentleman er er ...I know that it's a magnetic thing and
 they don't want anybody else there really,..... so that didn't
 47 particularly bother me.

I.Did anything else worry you whilst in the scanner?

48 Only for the fact that I wouldn't have wanted to show myself up, knowing one of the staff, I
 wouldn't have wanted to have had the screaming adabs!.

I.Did it differ markedly from what you expected it to be like?

49 Umm, I didn't realise that the noise was as bad as it was, although the noise didn't really bother
 me and I truly didn't realise that the hole wasn't as big as what it
 50 was...and I don't know. I had the impression that because it was my shoulder I wouldn't be in
 the machine as such they would have an extra bit to point at the
 51 shoulder, I don't know. I don't know what I was imagining.

I.Would it have helped you if you had known this beforehand?

52 I don't know... It might have made me worse I think, because if I had know too much, I might
 have started thinking about it for too long, that might have made it
 53 worse, I am not saying it would have done but it could have done I think. I think that
 sometimes if you have a little knowledge it can be a bad thing, because you
 54 can imagine all sorts of things, I suppose it depends on the way that it's written and how it is
 explained, if it's in 'everyday speak' it might not be so bad, but it's
 55 possible that they have some sort of information sheet but I didn't get one because they
 phoned up to say there had been a cancellation. But I certainly didn't
 56 get told anything, I just got told to go at a certain time and that was it.

I.In very, very simple terms, do you have any idea how this machine operates?

57 I just think it has something to do with magnetic, eh I can't think of the word (pause)

I.Fields

58 That's it thank you, I don't know how it gets the picture, I don't know how, I know it's magnetic
 and not x-rays, but other than that I don't know. I know it looks
 59 more at soft tissues rather than bone, but other than that no.

10 reaction in scan
 2. concerns

2.1 problems

12. satisfaction

10 reaction in scan
 2. concerns

3. expectations

5. information

6. knowledge

68 **I. Have you had any other high technology imaging scans?**

69 I had a CT scan about (long pause) 10 years ago on my back, but that was okay because my
70 head wasn't in, but again I didn't like that because you have to lie
71 still and it's the length of time they seem to take so long, they, they... well with the C.T, they do
72 something that I assume was the planning or something. I have
73 no idea they seemed to say "right we are ready for you now" and I seemed to have been there
74 for ages and the machine had been whirring, but they hadn't done
75 anything.

76 **I. Did you get an explanation before that scan?**

No.

77 **I. Any verbal explanation?**

No, I went for another investigation and they were unable to do it, so they had to do that instead.

78 **I. So no explanation at all?**

No, none again, I was hoping that ..well they did find it then; you know sort out what was causing the pain and get it sorted.

79 **I. Were you fearful in anyway with no explanation being given?**

I wasn't really because as I say with a little knowledge working in radiology admin. I realised that these things occurred, so therefore I had a little bit of knowledge but not too much, so it didn't really bother me. Had it been my head and had I been inside it I don't know what it would have been like.

80 **I. If I said to you that you were due to have another scan could you make any recommendations to improve the quality of service?**

Obviously, since I didn't have any explanation, well because I work here they tend to think that I know what is going on and they forget that I am not a radiographer, so you know what is going on or you have found out or whatever, but I try not to ask too many questions because half the time I don't want to know, I do want to know, but I don't.

81 **I. Do you feel as though you could have asked questions?**

Here? I suppose I could have done, but since it was cancellation and they fitted me in, I thought well let's go and get it over and done with. I wasn't expecting my head to be in it so much, so it wasn't until I was actually positioned, that I realised it was literally down on my face I -(pause) I don't like it. I have had my fair share of ordinary x-rays but I never felt like I did in that machine I must admit.

82 **I. Just going back, if I may, to the CT scan, have you again in your own words any idea how that machine operates?**

Err, it takes slices similar to the magnetic resonance one but it uses x-rays, whether they are the same as comes out of the ordinary machine, or whether they are different, I don't know. I know it's slices and then they can put the slices together to see if there are any problems and it maybe a bit deeper than ordinary x-rays, I don't know. Oh you can specify an area better with computers and things but I could be on the wrong track there quite easily.

83 **I. Finally how did you feel about the standard of patient care?**

Well, it didn't bother me so much thinking back. Because they ask you to keep still, and you are in a position where you can't actually see anybody, you don't want to move because you are frightened to death of upsetting what they've done if they've got you in a position that they like. I mean if you press the button they come to you, that's not a bother, but if you don't, you don't see anybody ..if you have a normal x-ray at least you can see them through the screen; you are positioned to see them in that way, but this one you can't see anybody.

84 **I. Do you feel isolated?**

In a certain way you do, especially if you are a little bit claustrophobic and it starts to build, and you think can I stick can I stick it? Then in the end you have to press the buzzer. I mean if somebody was there talking to you and calming you down it wouldn't be that bad. You know I didn't like it, they offered me a

6.knowledge

2.concerns

9.other radiology
2.concerns

6.knowledge

4.feelings

10.reaction in scan

10.reaction in scan

1008 sleep mask, but I already had my eyes closed because this thing was down on my face so a
1009 sleep mask wouldn't have made any difference I don't think. The
1010 noise didn't bother me it was the fact that this thing was there and I couldn't move I think it's
1011 the fact that you have to lie still, that's more difficult than anything,
1012 and it's for longer periods. If you have an x-ray, they say 'right hold your breath.' they press the
1013 little button and right breath away, if they remember, eh but on
1014 that they say stay still. You can't move, if you have an itch you are frightened to scratch it,
1015 because they told you to stay still. They don't say right hold still and
1016 give you a chance to move slightly in-between.

12.satisfaction

1107 **I. So are you saying there was a lack of communication?**

1108 I suppose there was yeh, they did talk to me through the microphone, whether they could see I
1109 was getting a bit agitated or not I don't know, but they said "it
1110 won't be long now we are doing a very quick one". They were friendly in their approach
1111 initially, and when I had to come out of the machine the radiographer
1112 came and tried to make things better with the sleep mask or whatever, but
1113 they greet you, you get ready, you go in the room and then they are gone. Unless something
1114 does happen, I mean they had to come into me but whether they
1115 would go into anybody unless they pressed the buzzer I don't know only at the end

1116 **I. Were you given any information at the end of the examination?**

1117 No, they just said that my consultant would be in touch, they won't tell you anything then
1118 anyway, will they?, they're not allowed.

MRFEM2

..1.1age

Age:49

..1.2 previous scan

I. You have just had a Magnetic Resonance (MR) scan, is that the first one that you have had?

Yes my first one

3.expectations

I. So could you perhaps tell me then what you were expecting to happen?

I had no expectations because ehm. I had never experienced this before, so I don't put any fantasies on about what it could be, I just came here with a very open mind and then took it from there really.

3.expectations

I. Did you have any idea beforehand?

Nothing, I had seen ehm scans on programmes on the television, so I had an idea of what the machine looked like and that you are actually slid in, but that's about it, so I really didn't...I tried not to.

3.expectations

I. Okay

Because I think personally that if I start to concern myself about something it's just worrying unnecessarily instead of just allowing the experience to happen when it happens really.

I. That's fine, were you given any information beforehand?

Yes

I. Did you find that useful?

Yes, because it ehm explained to me what was going to happen and also to come here without makeup and jewellery, so therefore it saves unnecessary time and probably feeling uncomfortable for doing something wrong, when I got here and trying to go and scrub make-up off and things. So yes, the leaflet was very useful and I read it a couple of times when I got it and lately when I realised that my scan was coming up I re-read it again to refresh my memory.

5.information

I. Do you think there is anyway in which we could improve the leaflet?

Ehm not for me personally, but I suppose it depends upon the type of person, you know whether they are nervous or not, but for me it was fine. I needed to know what should I wear, what should I not do, and that was it for me. You know like bringing something comfortable to wear that does not have metal in, but, no the leaflet was fine for me.

I. Could you then tell me your thoughts and experiences then when you went into the scan room?

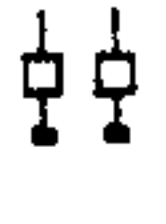
Well I ehm was trying to get myself to relax and to imagine that the machine was just a very natural surrounding for me, so I tended to drift off and think about other things and at one point it was like, from my own experience, it felt like as though I was in a huge womb because there was this 'back-beat'. It sounded like disco music, you know when young men go past in their cars and you can hear the sound boom,boom,boom, it was very similar to that in the background. As I was lying there I thought golly it's like being inside a huge womb

10.reaction in scan

14.analogies

14.analogies

10 reaction in scan
14.analogies



56 this is because it's like a big heat beat.

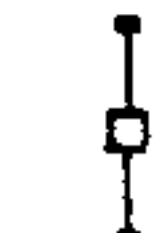
14.analogies



I. Did you find that soothing or irritating?

57 Soothing I felt quite relaxed by it, I found the whole
58 experience very pleasant actually ((laughs)) because it
59 was just so relaxing for me, because I could drift off
60 and think of other things and at one point I felt as if I
61 was travelling along in a tunnel in space, I could feel
62 myself moving or floating in the space, it was good, it
63 was just different really, but very pleasant. Of course,
64 at one time I had been in a womb, but of course I have no
65 recollection of it, so I thought wow this must be what it
66 is like, because that 'back-beat', it's like somebody's
67 heartbeat going and then there were different sounds
68 different vibrations. Nothing, there's no part about it
69 that was unpleasant for me apart from having to lie there
70 for so long my back ached a little. I was in there
71 [scanner] for around 50 minutes I think.

12.satisfaction



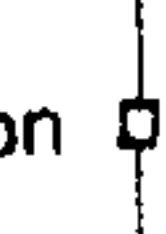
12.satisfaction



I. So presumably you would be happy to have another one if you needed to?

72 If I needed it, oh yes.

13.your explanation



I. If you were to explain to someone else in your family what an M.R scan was, what would you say?

73 Well everyone's experiences are different so ehm I would
74 try to be as practical as possible and explain that you
75 lie on a bed that slides into a very confined space but
76 before you go in they place like a bracket thing over
77 your head. That feels strange, but there are holes in the
78 bracket, it's nothing to be afraid of, it's just very
79 straightforward. I would just explain that really, and the
80 different sounds that I experienced.

6.knowledge



I. Have you any idea at all, in simple terms how the M.R scanner works?

81 Ehm no, I don't actually, but I think just thinking about
82 it, that it is some sort of ultrasound that bounces off
83 things, but that is just me because there were different
84 sounds and vibrations so I wondered whether it worked by
85 sounds hitting parts within the body. This might then
86 send signals back as to how dense parts are, but I
87 haven't read up on how they work no. I think I should
88 know how things work just out of curiosity really.

11.recommendations



12.satisfaction



I. Finally have you any recommendations (ideas) as to how we could improve the whole experience?

89 Not for me no because I try to be a very practical person
90 and I go along with what the hospital are doing. I mean
91 I came here a few minutes early expecting to wait and I
92 was brought in straight away, that was brilliant. I
93 assumed there would be a bit of a wait ((laughs)) so
94 that's nice not hanging around, so that you do not get
95 nervous or anything. Also the nurses or whoever the
96 staff are were absolutely smashing, they came over as
97 very caring, very concerned asking if I was comfortable;
98 if I was okay and they were genuinely concerned. I mean I
99 know that it is their job to be caring, but they actually
100 sounded very concerned and were really nice. I cannot
101 think of any possible improvements and the speed of
102 appointment was excellent. I'll probably go back and
103 reflect on it because it's not an everyday experience.

I. Thank-you for your time

FEM3MR

..1.1age

AGE 39

..1.2 previous scan

I.You have just had an M.R scan, what that your first one?
No it was my second

3.expectations

I.Could you tell me then what you expected to happen, obviously if you have had one before you will have an idea, so maybe you could think back to the first time?
No nothing really, you just feel enclosed in it.

5.information

I.Had you received any information beforehand?
Well they asked if I was claustrophobic and things like that but nothing in the way about what it involves.

3.expectations

I. So were you in any way bothered or concerned about the scan?
Ehm..no not really it was just wondering what it was going to be like. I didn't know what it was going to be like.

10.reaction in scan

14.analogies

I.Okay can you tell me about your experiences in the scan room?
It was very airy and light there was nothing scary about the room, but it wasn't a pleasant thing, but it makes you feel better. The first time I had a scan I was completely enclosed (on the mobile van). The whole thing was like a set of drums or a big heartbeat you know.

14.analogies

I. Do you think that helps you or puts you off?
Oh no I could fall asleep in there [scan room] in think, I think it is the rhythm of the boom, boom, boom, you know.

I. Right, that makes you feel quite relaxed?
Yeh, I cannot remember any of the noises from the first one at all, it was a good five or six years ago, all I can remember is being enclosed in the thing. It was a bit claustrophobic.

I. Did you feel warm in there?
Well I felt cold towards the end

I.Did you feel isolated in any way?
I felt alone, I wasn't aware that there was anyone else there. I felt alone with that machine yeh, I didn't know if there was anyone in the room or not. But I had this pump thing (alarm) to squeeze if I had a problem, that was quite handy.

5.information

12.satisfaction

I.Other than those issues you felt okay in there did you?
It might be a problem for say someone of a bigger size and perhaps they would then get very hot.

I. So presumably you would have another one if you needed one?
Yes

6.knowledge

I. Without any technical details, have you any idea how that machine works?
It's something to do with magnetics and scans part of the body, that's as much as I know ((laughs))

52 I. If someone else in your family came along for one of these
53 scans how would you explain the procedure to them?

54 I would say that it is nothing to be worried about or to
55 scared about, but it must depend upon the person, someone
56 who is claustrophobic is going to be, you know, quite
57 difficult for them. I'd say or explain how they talk to
58 you before they [radiographers] put you on the machine
59 and that you just lie down and make yourself as
60 comfortable as possible and the best thing to do is to
61 close your eyes, or if you feel brave open them.

13.your explanation

11.recommendations

62 I. Finally, have you any recommendations that may help us
63 in the future?

64 Well a bit more information, I suppose, about what the
65 scan involves. Especially for someone that hasn't been
66 before, you know to say that it is enclosed; they may
67 feel a bit, well claustrophobic. Pictures of the machine
68 might be useful as well.

69 I.Thank you very much for your time
70

..1.1age

MRFEM4
Age 41

..1.2 previous scan

I.You have just had an M.R.I scan, was that your first one?
Yeh, it was indeed

3.expectations

I. Could you tell me what you were expecting to happen?
A big drum revolving around me I think, a thing going round and around, but it was nothing compared to what I thought it might be. I didn't expect it to be so noisy, the headphones helped a lot with the music it was a lot more calming than having to just lie there and listen to that thumping sound.

5.information

I.Did you receive any information beforehand?
Ehm.. Not a lot since it was one of these that had a cancellation, so I didn't have any information as such, but I knew roughly what it did, I think that was about all.

5.information

I. Did you get that information from listening to other people or where?

Well the doctor did say to me that err they wanted to check out my backbone, spine and muscles, so I knew roughly from that point of view, but that was all I knew. I wasn't sure but I thought the machine went around in a circle but I just wasn't sure. It was like 'stargate' ((laughs)).

14.analogies

I. Do you think that it would have helped to have had some more information before the scan?

Yes, especially on the noise side and the fact that you are so close to the machine, you know your face, I mean I shut my eyes it didn't bother me in the least but to other people it could be very daunting, very daunting it's just so close to you.

5.information

I. Could you then perhaps tell me what went through your mind and what your thoughts and emotions were when you were inside the scanner?

When I first went in, I was frightened to be quite honest, I thought oh my god! But they [radiographers] talked to me, that calmed me. I must admit that once they spoke to me I calmed down an awful lot knowing that I had that button in my hand. That was great because I could have stopped it at any time, ehm that was nice if I couldn't have had that I don't think that I would have been so calm about it.

10.reaction in scan

10.reaction in scan

I.Did that give you an element of control ?

Yeh, yeh you controlling the situation rather than that controlling you, that was a good feeling, I think that I might have been panicked more without this button. If it had been more a case of 'you just lie and we'll feed you into this machine and you just get on with it, I think I would have been more terrified. So yeh the control button was a good aspect of it.

12.satisfaction

I.Did it bother you at all that the radiographers were not in the same room?

Ehm, I couldn't see anyway, I think that even if they were, you would not know about it, I mean they could be behind a screen or sitting at the front for all you know, you just don't know what is happening, so the fact that

12.satisfaction □ 58 there is no one there doesn't make any difference. But I
59 could still hear them and they could still hear me so
60 that made a big difference.

61 **I. Some people have said that it reminds them of**
62 **something in there [scan room] the noise and the machine,**
63 **did that remind you of anything?**

14.analogies □ 64 Ehm.. weird this now, being in a coffin on a building
65 site, that's the sort of thing, I have always had a fear
66 of being buried alive ((laughs)) and that was sort of, ..
67 I lay there and thought I wonder if this is what it would
68 be like. Perhaps that's watching too much television or
69 something, but I have always a fear of being buried alive
70 and I always said to my husband "You make sure that I am
71 well dead before they put me in a coffin". I also felt
72 towards the end that something was burning, I didn't get
73 too hot because the air blowing on my face was nice, but
74 there was this burning smell it must have been the
75 machine itself or something ((concerned expression)).

76 **I. Some people have described the experience as being**
77 **inside the womb with the heartbeat outside, could you**
78 **relate to that?**

14.analogies □ 79 Oh yeh I could actually, I think if I could have relaxed
80 a bit more, but I have a lot of problems lying flat. I am
81 in a lot of pain and discomfort. But I could relate to
82 that yeh, I have actually got my children's heartbeat on
83 tape so I could have quite happily related to that. It
84 calmed me down in a funny sort of way and you could feel
85 it thumping away, which was quite nice it was like having
86 a massage.

87 **I. So presumably you are quite happy to have another one?**

88 Yes

89 **I. If you were to explain this procedure to someone else,**
90 **say in your family, what would you say?**

5.information □ 91 Ehm... being as we are all science fiction buffs I would
92 say it's a bit like a stargate
93 (it's a big gateway that they go through to another
94 dimension). We nicknamed the scan the 'stargate' when we
95 heard about it, but it really is the fact that you don't
96 walk through it, but ehm. it's real technology it's not
97 something that you will have experienced before and it is
98 not like going for a normal x-ray or anything like that
99 and it's not like a C.T scan this is completely
100 different. You couldn't have it done if you were
101 claustrophobic, somebody like that would have to be
102 knocked out. It's a pleasant experience; it's not one
103 that I would dread doing again. I think that if you had
104 more knowledge before you went in there and tell them
105 about the noise and the fact that the machinery is very
106 very close to your face, but if you close your eyes lie
107 back and relax it's not a problem. What you can't see
108 can't hurt you.

109 **I. Have you any idea how that machine works?**

6.knowledge □ 110 I haven't got a clue, no I ehm..it must be like 3D
111 imagery which shows sections at a time it's like
112 chopping you up into sections, instead of a flat picture,
113 it would show you a section at a time and they could
114 examine that from all angles. It uses magnets I think.

115 **I.Finally have you any suggestions or recommendations as**
116 **to how we could improve the service?**

It would be nice if you knew beforehand about the noise and perhaps they should advise to lie back relax and close your eyes. Ehm because I think when you are looking at that machine it is, it's a very frightening thing, so relax and listen to the music and it will go a lot quicker, if you try and fight it, I think you could loose it in there quite badly.

11.recommendations

I. Some people have suggested a picture of the scanner on the patient information sheet we send out, and talk about the whole process beforehand might these be useful?

Yeh, it could be I know that time is valuable but even 5 minutes especially to explain the machinery. They could say this is the machine, this is what it does and this is how it works, and you know take you through it that might be better. The staff were great and really put me at ease, but yes just that little bit more would be useful.

12.satisfaction

I.Thank you very much for your time

MRFEM5

Age 35

1.1.age

I. Was that your first M.R scan?

Yes, and my last ((laughs))

1.2 previous scan

I. Could you tell me then first of all, what you were expecting to happen?

3.expectations

Ehm very much what did happen probably following on, because my mother has recently had one, I suppose you see these things on the television and on the news, it's innovation and modern technology. In terms of me personally? (interviewer nods in agreement) it wasn't anything that I didn't expect apart from the noise.

I.Were you given any information beforehand?

5.information

No not really, I got more when I was actually in the department here, which I think is more appropriate.

I. Since your mother has had one has she explained it to you?

5.information

No she has dementia

I. I am sorry

No it's okay, they did them [scans] since she has had so many strokes to detect things in her brain. I did get some information from the doctors that were treating her.

I. Could you perhaps describe for me what your emotions and thoughts were when you went in there for a scan?

10.reaction in scan
14.analogies

Well I just hoped that it would detect what they were actually looking for and my only other worries were that it was a very confined space. Now, I don't suffer from claustrophobia but I didn't want to open my eyes thinking that I was in a coffin, there was no space, and so I just kept my eyes shut all the time. I thought if I open my eyes and become more aware of my surroundings and thinking that things are going to go wrong or any noises that I am unaccustomed to I might start thinking, I might be trapped in there.

I. The fact that the radiographers were not in the room, did that bother you?

14.analogies

No it didn't, I just assumed that they would be behind a screen.

I. Some people have said that the scan experience reminds them of something, you mentioned being like inside a coffin, is there anything else?

No not really

I. Some people have said that it reminds them of a heartbeat and being enclosed in a womb, could you relate to that?

14.analogies

No not for me it's a bit far fetched that, sorry ((laughs))

I. Presumably then you would have another one then?

12.satisfaction

Yes if I had to, you know it would be in my interests to.

I. If you were now going to go and explain the procedure to somebody else, what would you say?

13.your explanation

Ehm.. it's painless and you sit inside this cylindrical shape tunnel and you don't come into contact with

13.your explanation

54 anything apart from the fact that you have a cylindrical
55 shield above your face and a breastplate thing. It's
56 just the noise and once you become used to the noise and
57 you know that you will be in there for 10-15 minutes. To
58 some of my friends, it might be like lying on a sun bed
59 for 10 -15 minutes, that's how I would describe it.

6.knowledge

60 **I. I don't need technical details here, but have you any
61 idea how that works? ((points to M.R scanner))**

62 Ehm I think it is some sort of x-ray system, I know that
63 it looks into your brain and divides your brain into 4
64 quarters and all sorts of peripheral visions and all this
65 sort of thing it dissects and ehm.. can look at you in
66 different ways similar to what I have had done as well. I
67 imagine that it does the same thing and can look at
68 different organs and things such as the heart.

69 **I. Fine, finally do you have any suggestions or
70 recommendations that you could make to improve the whole
71 process?**

72 No because I was told what I needed to know when I
73 arrived here and the lady who brought me in said that
74 I'll tell you about it when I come inside, which I think
75 is a much better idea because people may well get
76 themselves very worked up about it.

11.recommendations
12.satisfaction

77 **I. So you think that it is better not to know about it
78 beforehand?**

79 Yeh I am sure that the majority of people have seen this
80 in some sort of media coverage or whatever, but to have
81 it explained once you are actually in there and you can
82 see what is going on is much, much better. You often
83 anticipate, the worse if you don't know what is there or
84 what is going to happen.

85 **I. Okay that is fine thank you very much indeed**

86
87

MRFEM6

1.1.age

Age: 42

1.2 previous scan

I. Was that the first M.R scan that you have had?
Yes it was

3.expectations

I. Could you please tell me then what you were expecting to happen?
Ehm.. that's a difficult one, my daughter has had a C.T scan so I was expecting something quite similar to that but it was a lot; actually a lot nosier. The C.T scan was very quiet so this was a lot nosier than expected. To be honest, I didn't really know what to expect just something a bit similar.

5.information

I. Did you have any information beforehand?
No only what was on the appointment card

I. Did you find that useful?
Yes it was actually; they put things like bring your own C.D along and things like that.

I.Do you think that it may have been useful to have more information about the machine itself?
Ehm. Possibly from an informative point of view, I don't think that it would have made any difference to the actual scan itself not from knowing exactly what was going on with the machine itself.

I. Can you tell me what your thoughts were when you went into the scan room itself?
(long pause) just that I would be comfortable that was my main consideration really. It was difficult to keep still for such a long time and after about 10 minutes everything started to ache, but overall it was quite relaxing ,so yeh it was fine.

I. Did the fact that the radiographers were not in the room worry you at all?
No I assumed that they probably wouldn't be but that wasn't a problem.

12.satisfaction

I. Would you be happy to have another one?
Yeh I would, it did go through my mind and I was glad that my head didn't go through the machine because of the vibration. It went through my mind that people that have to spend longer in the machine with this vibration going on, that it could be quite ..ehm difficult.

14.analogies

I. People have made various analogies or similarities about what its like being inside the scanner, is there anything that you think it was similar to?
Ehm... similar to the background feeling of being in a ship, you know with the engines going and the vibration and everything. This was quite amusing because sometimes the beat was in co ordination with the music I was listening to.

13 your explanation

I. If you were going to explain this procedure to someone else in the family, what would you say to them?
If they were coming for something like the knee, where their head wasn't going into the scanner, I would just say sit back and relax listen to the music and tell them that there is nothing to be worried about. In practical terms,

13.your explanation

I just can't think of anything else just now.

I. I don't expect any technical details here but could you tell me in

Simple terms how that machine works?

6.knowledge

((Long pause)) ehm.. not particularly, I mean I don't know if the magnetism shows different densities in the same way that x-rays do. You know in the same way that x-rays show bones, magnetism shows up soft tissue as well as the hard tissue, but I am not sure technically why it does that or how it does that. I assume that it takes slices through the body again in the same way that the C.T scan does.

I. Finally, have you any suggestions that would improve the whole process of having an M.R scan?

11.recommendations
12.satisfaction

Probably half an hour down the line I might think of something, I wasn't particularly concerned coming for it and the staff here have been very helpful and everything has been explained to me and there have been times when I could ask questions if I wanted to. People have explained exactly what they have been doing, step by step as they have been going through it ,so that was fine.

I. Some people have made suggestions and it would be interesting to know whether you would agree. First of all a picture of the scanner on the information sheet?

11.recommendations

Yes, because my assumption that it was like the C.T scan, gave me an automatic image of what it was, how big it was and since I had gone in with my daughter and spent quite a lot of time with her in there had I not had that then yes, I probably would have been concerned. Certainly if it was my head that was being scanned then... and my head had actually gone in, then from a claustrophobic point of view then yes.

You know how much gap there would be and how much space and air and if the whole of your body had to remain completely still then, yes it would be useful to know beforehand.

I. Okay thank you very much indeed.

MRFEM7

Age: 68

1.1 age

I. Was that the first M.R scan that you have had?

1.2 previous scan

Yes, I have had a C.T scan before but not one of those [MR].

I. Could you tell me what you expecting to happen?3. expectations
7. misconceptions

Well I knew it was a big tube, you know a big thing a 'cylinder job' into which I would be projected, but that was all. I had guessed that it would be noisy, and it was, because I've had the C.T scan and that was noisy. So I was a bit forewarned about what was going to happen.

I. Did you receive any information beforehand?

5. information

Just the leaflet that they sent to me through the post, that was good it told me pretty well what was going on.

I. Could you tell me what the actual scan was like for you?10. reaction in scan
4. feelings

It's a bit nerve racking, like anything that you're not quite sure about, you feel very nervous, anything that is new to you, you feel very nervous and this vibration thing on the ehm bed you can feel, you can feel this bump, bump, bump sort of thing.

I. Did that concern you in anyway?

14. analogies

I don't think it concerned me ((serious expression)) it feels like a very huge heartbeat, that's what it feels like.

I. It has been suggested that it is a similar feeling to being inside the womb, being enclosed and hearing the heartbeat.

14. analogies

Yes, that's a thought perhaps I am not so imaginative but that's it exactly. ((laughs)) It was just like a huge heartbeat it was a bit disconcerting really I suppose.

14. analogies

I. Did the noise help you to relax or not?

No I was a bit tense with that.

I. Were you aware that there was no one else in the room with you?10. reaction in scan
2. concerns

Yes, yes, yes ((loud concerned expression)) that again is a bit frightening. You feel isolated; I think it worried me, although you do have your little bell in your hand which is very comforting.

I. Do you feel that the bell gave you an element of control over what was going on?

10. reaction in scan

Yeh it meant that if you do panic, for whatever reason, you know that you're not going to do, but just in case you did someone would come and help. So yes, I was very pleased to have that yes.

I. Would you have another one if necessary?10. reaction in scan
12. satisfaction

Oh yes I would, I mean it's a wonderful diagnostic thing isn't it? and all the time this noise thing is going on and you're concerned about this heartbeat you keep thinking, well it's doing a grand job here, it's finding out what's going on in that grotty knee of mine ((laughs))

I. If someone else in your family was coming along now to

55 have one of these scans, how would you explain it to
56 them?

13.your explanation

..2.1 problems

57 Explain it to them? I don't know really, I suppose I
58 would say that it is a little bit noisy a little bit
59 scary, but it doesn't hurt, just lie back and listen to
60 the music. I mean you just have to get on with it, the
61 music was very helpful. You can start getting wound up
62 and you can start thinking all sorts, but the music
63 helps.

64 I. I don't require any technical details here, but do you
65 know how that scanner works?

6.knowledge

66 Not a clue, I just know it is powerful magnets of some
67 sort, perhaps this something or other, I don't know. I
68 just do not know I am guessing.

69 I. Okay, do you how it differs from x-rays?

6.knowledge

70 No I don't think that I do, it must be less damaging than
71 x-rays obviously, otherwise you wouldn't sit underneath
72 an x-ray machine for that length of time. Yes, I have
73 damaged my neck here ((points to her neck)) from x-rays
74 as a child.

75 I. Okay final question, have you any suggestions that you
76 could make to improve the whole process of having a scan?
77 To give you an idea of the type of things people have
78 suggested so far; a picture of the scanner on the front
79 of the information leaflet

2.concerns

80 Yes that would be useful because I was bit bothered ehm that I
81 was going to have to go in head first as I did for the
82 C.T scan, it was a bigger tube than that I think. I
83 think I was a bit bothered that it might be that again
84 and have to go in head first. If I had known that I was
85 going in feet first and that it is open at both ends
86 anyway, it might have.. I have been a bit, a bit tense
87 all morning I really had. It was this morning, I didn't
88 sleep very well last night, last night I was refusing to
89 think about it, I was shutting it out but I got a bit
90 wound up this morning.

2.concerns

91 I. Another suggestion was to meet with the staff
92 beforehand and to discuss the scan before you go in,
93 would that be useful?

12.satisfaction

94 Well they [radiographers] are very good. I think anything
95 else would be a bit extreme.

96 I.Thank you for your time
97

MRFEM8

Age: 64

I. Was that your first M.R scan?

No my third, they are a necessary evil.

I. Oh I see can you tell me what you thought was going to happen then, obviously you had a good idea from previous experiences?

Yes I had a good idea because I've had two before, but the first one was quiet un-nerving, you know it was on the mobile van. It hadn't been explained to me or anything it was in the van and very claustrophobic and the fact that I went with my head ehm because I had one on my ear, my head and ehm . I mean the fact that you went in headfirst was very un-nerving and the fact that it is very long.

I. So how did you feel?

Trapped in really, you can't breath because you feel as if you haven't got a lot of air circulating around you.

I.Had you received any information beforehand about that scan?

No very little I think, I certainly didn't have a leaflet like I have this time. Because I have had a leaflet this time to explain what the procedure is about. I think that it should be bi-lingual though, it's in English only.[Welsh hospital]

I. Is it not?

Hmm no

I.Gosh that does surprise me, I will mention that to them because I will feedback these recommendations.

Yes, yes I think it should be back-to-back bi-lingual.
Yes, yes

I. So if I can refer to the first scan, because that is perhaps the most interesting one, what did you actually feel when you went in there?

First it was the close proximity and everything and then it was the ehm, I can remember the claustrophobic feeling of going head first into what seemed a very small hole, isn't it really? Ehm with that particular one I think it was the head and I had an injection which made me feel very hot for a little bit. Nobody had told me before I went in that I would be having an injection anyway. When I was inside the scanner it felt a bit hot but fortunately there is a fan there which blew around a lot of air, my mouth went dry, you just become all tense and nervous. Even if you are not a panicky person you would panic inside that scanner.

I. How did it compare to this one today?

Well this one today, it was half as noisy maybe because it was in a bigger room I don't know.

I. Did it remind you of anything in there today?

Woodpeckers ((laughs)) or someone chopping wood.

I. Some people have mentioned that it sounds like a heartbeat, can you relate to that?

Yes it certainly reminded me of a pulsator of some kind

1.2 previous scan
..1.1age
2 previous scan
2.concerns

3.expectations
2.concerns

10 reaction in scan

5.information

11 recommendations

10 reaction in scan
2.1 problems

14.analogies
14.analogies

14.analogies

54 anyway and a motor giving you these vibrations. But I
 55 think that today is a big improvement on the old one in
 56 the van. The room is bigger more airy and ehm, but you
 57 know, the second scan was worse because I knew what was
 58 coming and what I was in for. If your mouth goes dry it
 59 is a terrible,terrible feeling because you feel as if you
 60 are going to choke. I experienced that the first time
 61 so the second time I took a fruit pastilles in with me,
 62 just popped it into my mouth, it just creates some
 63 saliva, you know to keep the mouth moist.

2.concerns

64 I. Yes, did your mouth go dry just after the injection?
 65 No all the time it's a process that the body ..ehm what
 66 glands it uses or anything I don't know, but it does make
 67 your mouth go dry.

13.your explanation

68 I. If you were going to explain this process to someone
 69 else now, what would you say to them?
 70 Well the first thing that I would say was it's not
 71 painful, that's the first thing, it was painful for me
 72 today because I have had 2 major operations and lying on
 73 my back is always painful, but otherwise I would tell
 74 them that there is a feeling of being close and that you
 75 go quite along way in, because you do and a lot of people
 76 don't like going into confined spaces. I have a son who
 77 used to go potholing; I didn't mind what he did as long
 78 as he didn't go potholing.

6.knowledge

79 I. In simple terms have you any idea how that works?
 80 Ehm it works with magnets ehm which ehm ..it's the centre
 81 of the body that gives off magnetic fields.

11.recommendations

82 I. Finally, do you have any suggestions or
 83 recommendations that could improve the whole process?
 84 Ehm to tell the patients that ehm, you know they are
 85 shown the machine beforehand instead of just going in
 86 giving them some reassurance, you know you will be fine
 87 there, just to let you have your bearings. You need to
 88 get your bearings first, if you've never seen it before
 89 it can be quite frightening. The other thing is I've got
 90 my husband with me today, I think it would be helpful if
 91 he could have seen what I was going through and why it
 92 has taken so long. He might as well have come in with me
 93 to see, I mean I have been in there for an hour and a
 94 half and he won't have a clue. He has never seen one of
 95 these before. They could have said that this is where Mrs
 96 Jones is going to be and we are going to do such and such
 97 a thing, I really do think that it is important.

98 I. Okay thank you very much indeed
 99

MRFEM8

1.2 previous scan
1.1 age
1.2 previous scan
2.concerns

Age: 64
I. Was that your first M.R scan?
No my third, they are a necessary evil.

3.expectations
2.concerns

I. Oh I see can you tell me what you thought was going to happen then, obviously you had a good idea from previous experiences?
Yes I had a good idea because I've had two before, but the first one was quiet un-nerving, you know it was on the mobile van. It hadn't been explained to me or anything it was in the van and very claustrophobic and the fact that I went with my head ehm because I had one on my ear, my head and ehm . I mean the fact that you went in headfirst was very un-nerving and the fact that it is very long.

10.reaction in scan

I. So how did you feel?
Trapped in really, you can't breath because you feel as if you haven't got a lot of air circulating around you.

5.information

I.Had you received any information beforehand about that scan?
No very little I think, I certainly didn't have a leaflet like I have this time. Because I have had a leaflet this time to explain what the procedure is about. I think that it should be bi-lingual though, it's in English only.[Welsh hospital]

11.recommendations

I. Is it not?
Hmm no
I.Gosh that does surprise me, I will mention that to them because I will feedback these recommendations.
Yes, yes I think it should be back-to-back bi-lingual.
Yes, yes

10.reaction in scan

I. So if I can refer to the first scan, because that is perhaps the most interesting one, what did you actually feel when you went in there?
First it was the close proximity and everything and then it was the ehm, I can remember the claustrophobic feeling of going head first into what seemed a very small hole, isn't it really? Ehm with that particular one I think it was the head and I had an injection which made me feel very hot for a little bit. Nobody had told me before I went in that I would be having an injection anyway. When I was inside the scanner it felt a bit hot but fortunately there is a fan there which blew around a lot of air, my mouth went dry, you just become all tense and nervous. Even if you are not a panicky person you would panic inside that scanner.

2.1 problems

I. How did it compare to this one today?
Well this one today, it was half as noisy maybe because it was in a bigger room I don't know.

14.analogies

I. Did it remind you of anything in there today?
Woodpeckers ((laughs)) or someone chopping wood.

14.analogies

I. Some people have mentioned that it sounds like a heartbeat, can you relate to that?
Yes it certainly reminded me of a pulsator of some kind

14.analogies

54 anyway and a motor giving you these vibrations. But I
55 think that today is a big improvement on the old one in
56 the van. The room is bigger more airy and ehm, but you
57 know, the second scan was worse because I knew what was
58 coming and what I was in for. If your mouth goes dry it
59 is a terrible,terrible feeling because you feel as if you
60 are going to choke. I experienced that the first time
61 so the second time I took a fruit pastilles in with me,
62 just popped it into my mouth, it just creates some
63 saliva, you know to keep the mouth moist.

2.concerns

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65 No all the time it's a process that the body ..ehm what
66 glands it uses or anything I don't know, but it does make
67 your mouth go dry.

13.your explanation

68 **I. If you were going to explain this process to someone
69 else now, what would you say to them?**

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71 painful, that's the first thing, it was painful for me
72 today because I have had 2 major operations and lying on
73 my back is always painful, but otherwise I would tell
74 them that there is a feeling of being close and that you
75 go quite along way in, because you do and a lot of people
76 don't like going into confined spaces. I have a son who
77 used to go potholing; I didn't mind what he did as long
78 as he didn't go potholing.

6.knowledge

79 **I. In simple terms have you any idea how that works?**

80 Ehm it works with magnets ehm which ehm ..it's the centre
81 of the body that gives off magnetic fields.

11.recommendations

82 **I. Finally, do you have any suggestions or
83 recommendations that could improve the whole process?**

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85 shown the machine beforehand instead of just going in
86 giving them some reassurance, you know you will be fine
87 there, just to let you have your bearings. You need to
88 get your bearings first, if you've never seen it before
89 it can be quite frightening. The other thing is I've got
90 my husband with me today, I think it would be helpful if
91 he could have seen what I was going through and why it
92 has taken so long. He might as well have come in with me
93 to see, I mean I have been in there for an hour and a
94 half and he won't have a clue. He has never seen one of
95 these before. They could have said that this is where Mrs
96 Jones is going to be and we are going to do such and such
97 a thing, I really do think that it is important.

98 **I. Okay thank you very much indeed**
99

MRFEM9

AGE:53

..1.1 age

I.OK, was that your first MR scan?

Yes.

..1.2 previous scan

I.Right, tell me what were you expecting to have, you said you were a bit shaky before you came. Tell me about it.

7.misconceptions

Well my sister and my brother and relations have had an MRI scan and they've gone in something, you know, you see it on television, they go in these big scanners and its closed up at the back isn't it? When I saw that, and it was open, I thought Oh, I'm halfway there,((laughs)) because I could see, I'm not closed in I'm terribly claustrophobic. If I go in a shop and I can't see the back, I only go in the front because I can't get out.

3.expectations

I.So you have claustrophobia?

Well yes, of a kind, so when they came for me, I've had no dinner, I couldn't eat my dinner.

I.Were you that worried?

Yes, I really was. Yeh Its just the thought - I thought you go in and all the back's shut and they shut you up in the front see, so I thought what if I can't get out you know ehm. While you're lying in there, especially the back of your head, I thought I might choke or anything. All these things come to your mind. I've never been able to put my head right back anyway so I had it raised a bit you know. Had it gone all the way back, well fear I suppose, I thought if I coughed a bit I would have moved and they would have to stop it. It was only 15 minutes, but I honestly thought it was an awful lot longer, especially with the noise and when it stops and starts and I thought, to be honest, that when it finished I was going to shoot out. I thought I'm on my way out, you know towards the end, but that's not the case is it?

2.concerns
..2.1 problems

I.No, you come out fairly slowly don't you?

Yes.

I. Ok Did you see any information beforehand? a leaflet explaining anything.

No.

I.You didn't see anything at all?

No, Oh yes, I'm sorry it was with the appointment I did read that.

5.information

I.Did you find that useful?

Ehm I did in a way, as I had never had one done before, but there's no explanation, I mean there are different types of MR scans.

I.There are.

You know you see the glass, well you see them on television mostly. The glass is like a dome isn't it and the back is shut, and they put you in it, well its longer than that really, it's like one of the grandchildren's sandpits. I felt a right fool.

13.your explanation

4.feelings

4.feelings

I.Yes. What does your grandchildren's sandpit look like?

Well, its not a sandpit, its like a tunnel, only not as big as that, you know where they climb through. I thought I've made such a fuss, although I was so ((laughs)) to go in it.

14.analogies

I.So although you had that you don't think it helped you to deal with what you were expecting to happen?

3.expectations

3.expectations

I was better seeing that before I went in.

5.information

I.Seeing it yes, but I mean the leaflet you saw beforehand.

Oh no, it just states what its for really, it doesn't actually state anything about it does it?

I.No.

11.recommendations

Even if they did a little drawing, to show that's open and that's open, end to end, I think it would make people less anxious.

I.Right that's fine, now if I could take you now from when we walked into the room where you had the scan, tell me of your experiences there - how did you feel, what went through your mind.

When I had the scan?

I.Yes, you said you felt relieved to see the machine.

Oh yes, I was - more relaxed you know. I was still a bit - you know - different ones saying you can feel the roller and you can feel this and hear this and hear that.

I.Who told you that?

A few people actually, in fact one of our friends called last week, he was about 6ft 4inches and he's not from this area, but he'd come and he said 'Oh, you'll know when you've been in one of them' and he said he went in it straight away being so butch, then he went outside with my husband and she said 'don't believe him, it took him 6 times 'cos he's 6ft 4! You know I thought well if he's like that and I do it the first time I'll feel brave.

I.Did he put you off?

Yes, he put me off quite a bit - well he did say they'll play music for you and you can hear the roller and all this thumping noise. Ehm It was a lot less than I expected to be honest. I didn't sleep last night thinking about it,

I was up most of the night, you know, and I thought trust my nose to be bunged up today and I've got to go in that thing there but I'd go again.

I.Right, so you'd go again?

Yes, had it been the glass one, closed, I wouldn't have gone in that today. Because I can't see the end.

I. Some people have said it reminds them of something, the noise beating away?

No, but to be honest when it started I thought it was a washing machine, you know when the clothes spin.

I. Some people say that it has a 'back-beat' like the heart beating, would you agree with that?

I think with having the ear things as well, the noise seems, more heavy you know. I think it sounds heavier,

I think it sounds heavier you know the thumping.

I.Right, so if now then you were going to explain this to somebody else, what would you say to them.

Well, first I would tell them that there was nothing to worry about, that you could see either end and the thing is

you've got your bleeper if you can't hack it, but as I say before I got in what I said was that felt more relieved,

now I saw the end and I wasn't closed it and I thought well I can do that.((nervous laugh)) didn't know

whether I could but I thought well I'm half way there. I certainly wouldn't put them off in any way.

I.Good.

You know we've got some smart alocs in our family, some have been to another hospital and different places and you know 'you know when you've been in one of them'((concerned expression)).

2.concerns

I.It doesn't help does it?

No, it doesn't, it makes you really panic, I've never suffered with panic attacks, but you could easily have one. couldn't you.

I.Ok, that's lovely. Obviously I don't expect you to know the technical answer to this, but I just need

to have an idea. Do you know how that machine works?

((long pause))..Well the only thing I can think of is that they put you in there and they set you up to a machine, what do you call it, an x-ray thing is it? I can't think of the word, computerised is it?

6.knowledge

I.Yes, it is computerised.

Computerised like a conveyor belt is it.

2.concerns
6.knowledge

I.Yes, do you know how it might differ from a normal x-ray?

No, ask me tomorrow, I've got a headache ((laugh))

I. All right, I'll ask you one more question and then you can go for a sleep.

I'm going for my dinner.

I.OK. Have you any recommendations to make that may improve the service? You mentioned a bit of

a diagram on the information sheets. Is there anything else you think might be useful?

Well there's that many different versions of it, one says it plays you music, I don't know whether the hearing things hinder more noise or not. Perhaps some people can take that noise, perhaps some can't. Maybe it is noisy for some people who can't stick noise, but you know in our place what with the grandchildren and a smallholding its always noisy; you've only got to cover one ear and it echoes in your head doesn't it? and when you've two things in it seems to go to the whole of your head somehow. To me it does, its very noisy inside, very noisy. Other than that there's nothing to it. My hands before I came here were absolutely sweltering. Claustrophobia and different people have been telling me some awful stories.

11.recommendations

2.concerns

I. Do any other stories spring to mind?

Well you know for instance they said, if you're only in 5 minutes, there's a panic button, you can press that and you don't have to go in it again if you don't want to. There are that many different versions you know, when you have an appointment like this, there's always someone in the queue waiting you're going to take somebody else's place and it is a waste isn't it? Had it been the one that was shut up I wouldn't have gone in it at all. I just wouldn't have gone in.

2.concerns

2.concerns
3.expectations

I. Do you think that it would be useful to come along and talk to someone about it beforehand?

Well, to be honest had I spoken to you before I went in there I'd have been more at ease. Although they do explain to you, I've got 13 grandchildren and to be honest they're all at different stages of things where they go in the shoot, they go over and they go in something like that. You know what I mean? When I think I made all that fuss. But oh that machine!

11.recommendations

14.analogies

2.concerns



I. Thanks fine thank-you very much

MRFEM10(2A)

..1.1age

Age: 38

..1.2 previous scan

I. You have just had an M.R scan, is that the first scan that you have had?
Well I had one on my neck last year

I. Was that also an M.R ?
Yes it was much the same, yes

18.Symbolic Significance

I. I am going to show you a picture now and I would like you to tell me the very first word, or thought, that comes into your mind? (show picture of M.R scanner)
Scan

3.expectations
7.misconceptions

I. Now you have had one of these before so perhaps you knew the answer to this question. Could you tell me what you were expecting to happen?
(long- pause) I thought it was very similar to x-ray, I didn't know it was anything like this, especially the noise part of it.

5.information

I. Who told you that you were having the scan, was it the doctor here or?
Yes, It was the doctor here when I went to the clinic.

..description

I. Did they give you any explanation about what to expect?
No he asked whether I'd had one before, I explained to him that I had and that I had a pretty good idea of what to expect.

20 Perceptions of the radiographers

I. Ehm, okay then, did you understand all the instructions that you were given in the room?
Oh yeah they were very clear it was only to lie down and things like that really.

12.satisfaction

I. So can you tell me what sort of things you were thinking about when you were in the scanner?
Well, it was quite restful to be honest, it was ok.

15.Communication

I. Did you find that to be the case the first time that you had a scan?
Well, ehm to be honest, the second time I thought it would take a lot longer, as you know, when you are in it the first time it all seems longer than what it is anyway. The first time it seemed to go on for ages and I remember thinking when was it, you know, coming to an end. But I remember the lady would speak through every so often, (microphone system) to see that I was okay, it helps. It helps a lot to know that somebody is there.

19. Isolation

12.satisfaction

I. Did you have any concerns during the scan or did you feel okay?
No I was fine

14.analogies

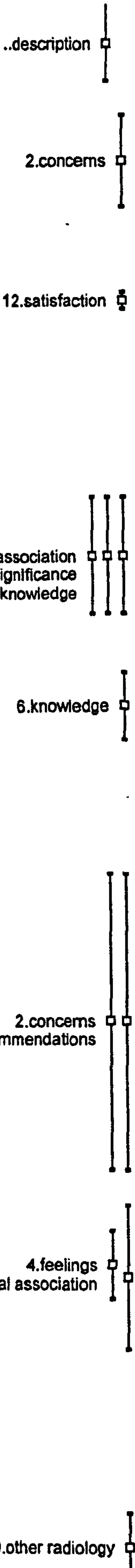
I. Okay that's fine. Was that whole experience, lying down on the table similar to anything else at all that you can think of, however strange or bizarre?
No, nothing just very different.

14.analogies

I. Uhm, some people say it's like being inside a tunnel ?
Well obviously it is enclosed and everything but... no it's okay I was fine with it.

..description

I. Fine, if you were going to explain this whole procedure to say a member of your family, what would you say to them?



I was speaking to a lady that was going on before me, she seemed quite nervous and worried and I said to her, "Its quite noisy but its okay there is nothing to worry about".

I. What sort of things was she worried about, did she say?

Being enclosed, you know she'd heard that you were enclosed in, so I told her that doesn't take that long really, it just seems longer. You think it seems longer than it actually is.

I. Well I am sure that must have helped her and put her at ease. Did you see her when she came out at all?

Yeah she seemed okay, I went in as she came out, she seemed very relieved. It's a worry going in because there are different things going through your mind, you know possibilities about what is going on, inside you know. So yeah, you are relieved when it's all over.

I. I don't expect any technical details or anything here, but have you any idea how that scanner works?

No, no I mean there were pictures in my mind as I was lying there, I think it must take numerous pictures from different angles, maybe going from right round, that's how I imagine it to be. I mean that's why you're obviously in that tube area (draws a circle in the air).

I. Do you think that it uses x-rays or?

I don't know to be honest, It must be similar to x-rays but not, if you know what I mean.

I. It uses magnetic fields to produce the pictures rather than normal x-rays.

I. So you have had 2 scans now, you know what it is like and are quite at ease, it is not a problem for you, although it is for some patients. Is there anything that you could recommend to us that would make the whole process better for future patients?

Ehm, I think making the room a little more colourful because, as you know, as you are going through all you see is the white thing (gantry hole) machine part of it, rather than, I mean it would stand out maybe as big and daunting I mean for someone going in first time type of thing. It can sort of take you back a bit you know.

I. Did you feel that the first time that you went in?

Yeah because you don't expect it to be, you know the size of it, the tunnel part of it it can be a bit scary. I think a bit more of a colour to it so it doesn't stand out as being, well hospital like and frightening.

I. Do you mean break the colour up and maybe have pictures on it?

Sometimes a combination of different colours can put people at ease, certain colours in rooms and things like that you know.

I. Have you had other scans or x-rays before?

I've had numerous x-rays totally different to this, you know just straight-forward x-rays.

I. Okay, thank-you very much indeed.

MRFEM11(2A)

Age: 32

1.1 age

1.2 previous scan

I. Was that the first M.R scan that you have ever had?

Yes

I. I am going to show you a picture now and I would like you to tell me what the first word, or thought, is that comes into your mind please (Show picture of M.R scanner)

Coffin

7.misconceptions
3.expectations

I. Can you tell me then what you were expecting to happen today?

I ehm I thought it was a scan like you have when you have a baby; I thought I was having a scan like that. I hadn't actually read all the notes that I'd been sent but they weren't very informative as to what it was. So I just thought it was like an ultrasound sort of thing.

5.information

I. Right, so when you were referred for this scan did the doctor or anyone explain it to you?

No nothing was said and the information sheet did not help.

3.expectations
7.misconceptions

I. So you were expecting an ultrasound scan?

Yes something along those lines maybe not the same exactly.

18.Symbolic Significance
25. Technological association
24. Orientation
16.Control

I. Can you tell me then; what were your thoughts when you entered the room?

I hope my head doesn't have to go in that tunnel (nervous laugh), that was my fear; in the end I didn't mind because it was only my leg. If my whole body had to go in there (scanner) I couldn't have done it. It was a little bit daunting until I knew it was only my leg going inside.

20. Perceptions of the radiographers

I. You were given an explanation in the room: did you understand everything?

Yeh, yeh (positive nod)

2.concerns
17.Coping Strategies

I. Can you remember what your thoughts were while you were in the scanner?

I was trying to sleep because I thought that if I could sleep it would go quicker and it's so noisy, ehm that was it really and work.

20. Perceptions of the radiographers
24. Orientation
19. Isolation

I. Did you know that the radiographer was in another room?

No I had no idea (forceful voice and expression) where she was whatsoever, I presumed that she went out of the room and I presumed they must be able to see me from somewhere. As soon as I walked in I got put on the bed and I didn't get chance to look behind me, so I just assumed that she could possibly see me through some contraption or window somewhere in the room.

17.Coping Strategies
16.Control

I. Did that worry you at all?

Ehm no, she gave me a buzzer and said that if I needed anything to press the buzzer, so I knew there was someone around, or at least I hoped there was (laughs)

13.your explanation
23. Self
21. Moulding Preconceptions

I. Okay then, if say someone else in your family was coming along for a scan, how would you explain it to then, what would you say?

Ehm quite noisy, it depends which part of the body was getting scanned as well, I mean if it was their head or chest, I think that I would definitely warn them that ehm ...if they have got any form of claustrophobia feeling it

13.your explanation
23. Self
21. Moulding Preconceptions

19. Isolation
25. Technological association
17.Coping Strategies

16.Control

6.knowledge

6.knowledge
7.misconceptions

11.recommendations

25. Technological association
21. Moulding Preconceptions
24. Orientation

16.Control
17.Coping Strategies

9.other radiology

would be very uncomfortable I should imagine. Anything where the sort of upper part of your body would be in it I think would be quite uncomfortable. I felt quite safe because it was just my leg but I think I wouldn't like to be in there on my own if there was maybe even a chance or something that a part of my face had to be covered, I would not like that. I think I'd have to ask somebody what to expect and thenbecause you are on your own and if you do get a bit of a panic, how do you get out? I mean it's nice, isn't it to know that you can just slide yourself out if its sort of mechanical, you know operated, and I thought, well you have the buzzer but you don't know how long it will take for them to get to you.

I. So are you saying that you did not feel in control of your own situation?
No, that's right and I'm not claustrophobic either, you know, I think if anyone had those sort of feelings, ehm it would prove very difficult.

I. Okay, I don't expect any technical details here but have you any idea how that machine works or what it does?
None whatsoever no.

I. Do you think it uses x-rays or..?
Well that's how I imagine it some sort of pulse, I don't know

I. Why do you imagine it as a pulse?
Because it makes those sort of dud, dud, dud noises so I imagine that it's like a pulsating sort of magnetic force going through you (laughs) I don't know, I really haven't got a clue.

I. It is a form of pulsating magnetic field so you are fairly close with that. Have you any ideas or recommendations that could improve the whole experience for the patient?
Well it's best to be pre-warned especially if it's got anything to do with your upper body (laughs) I'm, I mean, well I'm not claustrophobic but I wouldn't like to be in there on my own with that, well being in there or at least not for the first five minutes, just until you know, because I think you do get a bit panicky just until you feel like your breathing is relaxed and you are comfortable and then someone can scan you from there.

I. So if it had been necessary to put you further into that today, what do you think your reaction would have been?
Ehm I think I would have panicked to be honest ehm and possibly, I mean I am normally very well self controlled but maybe, on a bad day, I might have felt the need to press that thing (buzzer) and say I really don't like this. Probably because I hadn't been pre-warned.

I. Have you had any other scans or x-rays?
Yeh only an x-ray and an ultrasound they were easy enough.

I. That's all I require, thank you very much indeed.
Thanks

MRFEM12(2A)

This lady had her scan abandoned due to fear then returned the following day to complete the scan under sedation

..1.1age

Age: 40

..1.2 previous scan

I. The scan that you had today, was that your first experience of an M.R scan?
Yes it was

18.Symbolic Significance

I. I am going to show you a picture now and I would like you to me the very first word, or thought, that comes into your mind (show picture of M. R scanner)
Tunnel

3.expectations
2.concerns

I. So can you tell me then: what were you expecting to happen when they told you that you were going for a scan?
Ehm well I 'd heard about the scan before because my sister in-law has been for one and a friend from work's husband has had one, but I think they were full body scans. Ehm my sister in-law said that she would never have another one...and my friend's husband had to be sedated to have his, so I was terrified before I even went along to the department.

..description
22.Stories

I. Can you remember what your sister in-law said to you?
She just said it was the enclosed space really, and that it was very noisy and she was in for a long time; something like half an hour or forty minutes and she said it was claustrophobic, so I suppose it might not have been that long but it did seem like it.

5.information
23. Self
24. Orientation

2. Perceptions of the radiographers

I. Did you get any information; I know you came in from casualty, about the scan beforehand?
No there was nothing to read or anything, but she (radiographer) did explain to me, she said that when you go in it will just be your head ehm but when I went in and she laid me down and placed that cage thing over my face (coil) and then slid me into the machine, I just said "No I can't do it"

..description

I. What did the other friend have to say then?
Ehm well he'd had a bad time and wasn't well anyway and my sister in-law it was her back. He said it was totally enclosed and it seemed a really long time and when you're trying to lie still as well.

..description
12.satisfaction
2.concerns

I. Did anything else worry them?
Well my sister in law said about the noise, she said it was just like the sound of house- music (laughs), ehm I didn't really find the noise part of it too bad really.

20. Perceptions of the radiographers
4.feelings

I. Okay, can you tell then did you understand the explanation that you were given in the scan room?
Ehm everything was clear they said that the scan would be better for them to see and they'd rather do it because it didn't have radiation. So I knew all that but I just thought 10 minutes when yer terrified is a long time.

23. Self

I. Okay
I'm the biggest coward going as well.

25. Technological association
18.Symbolic Significance

I. What did you think when you saw the actual machine?

25. Technological association
18.Symbolic Significance

The actual machine didn't bother me, I didn't really notice the size of it, but once was inside it ,I couldn't do it and had to escape. I mean to be honest I think the C.T scan is more frightening to look at.

18.Symbolic Significance
25. Technological association

I. Really, why?
Because that's so big I think

25. Technological association
17.Coping Strategies
20. Perceptions of the radiographers

I. Can you remember what your thoughts were when you were actually going into the scanner?

Ehm when she put the cage over my head that was all right and then she put me in a little bit and it was so close and then she put me in more and ..well she had to bring me out straightaway. It was just so close to my face, I think as well as the .. she put the cotton wool in my ears, and the sponges at the side of my face and I felt even more constricted I think. Ehm but when I went today (under sedation) I just thought well I'm not going to open my eyes, I didn't open my eyes from the minute I laid down.

17.Coping Strategies

I. That helps?
If I'd have done that yesterday I think I might have managed it.

17.Coping Strategies
16.Control

I. How does closing your eyes help, can you explain?
Well because when I closed my eyes and went in it was light, there was a light, I thought I could see and she didn't put the sponges around my head either, so I didn't feel as restricted.

23. Self

I. Can you remember what your thoughts were while inside the scanner?
First day, just thinking I can't stay in here for 10 minutes, but it had been a bit of a shock the whole day because I thought I just had a trapped nerve or something I didn't think that it was going to need a scan at all. So once I'd actually thought about it, and it was either that, go today or wait 2 weeks and go to another hospital, I thought I'd put up with the injection (sedation) and survive 10 minutes rather than put up with 2 weeks of suffering. I mean I do understand that some people want to know what is going on but I am much the other way, if she (radiographer) had said shut your eyes ...but having said that I think I was a bit worked up anyway so. I mean they are very understanding, like today she said that, you know, if you panic I will watch you.

20. Perceptions of the radiographers
17.Coping Strategies

5.Information

I. To sum up your feelings then; it was just panic, feeling confined and a need to get out of the scanner. Is that a reasonable assessment?

4.feelings

Yes, I mean I didn't know that it didn't touch you or anything like that, it was just...a fear of it.

21. Moulding Preconceptions
23. Self

I. And do you feel that what other people told you made it worse?
Yeh, yeh (nods head) I mean, I wouldn't say to anyone now that I'd never have it done again, It wouldn't bother me now, even when they said your head and your feet will be out, it didn't make me feel any better. Ehm I wouldn't say to anybody ..but then I think having the sedative and thinking about it first helps to calm you down.

17.Coping Strategies

14.analogies

I. Is that whole experience of having the scan similar to anything else you can think of in life, however strange or bizarre?
Ehm... no not really, unless you have been play fighting with the kids and one of them sits on top of you, that type of thing. The point is that I don't consider myself to be claustrophobic, and I know that's why some people don't like it ,but I do think that its more what other people tell you, than actually was..you know the

14.analogies 68 experience itself.

69 **I. That's fine, if you were now to explain this procedure to a member of your family; what would you say to them?**

70 Ehm I would say like, try and be calm before you go or ask someone to give you..

13.your explanation 71 if you're going to be that

17.Coping Strategies 72 worked up to give you a tablet to calm you down really. I don't think that I would

73 be put out by one again. I

74 mean I would just say lie down and close your eyes and then you don't panic

75 because it isn't dark, it's light

76 and you know that there is someone to bring you out if you don't like it anyway.

77 **I. So it's important that it's light rather than dark then?**

78 Yes, I think if it was dark it would be....because I didn't

17.Coping Strategies 79 even notice that yesterday, if it was light or not, she

20. Perceptions of the radiographers 80 just put me in and ..and because it seemed so close to me

81 I just thought (sigh and nervous laugh)

82 **I. In your own words, I don't need any technical details; do you know how that scanner works; what it does?**

6.knowledge 83 Ehm I just know that it takes a picture, a picture of the brain, but not really.

84 **I. Do you think it uses x-rays or..?**

21. Moulding Preconceptions 85 It's something to do with that yes. Before that I didn't know the name, is it like

86 cross lines,that's only

87 because my son told me last night (laughs) whereas I think the C.T scan is more

88 of an x-ray type.

89 **I. Yes that right. Have you any recommendations that could improve the whole experience for patients?**

11.recommendations 90 Well, I don't know really, I think everyone is different because some people like to

91 know whereas I don't, if I

92 were going for an operation I wouldn't want to know; I mean tell me after, but

93 don't tell me before.

94 **I. So even if you were given plenty of information, as say an outpatient, you don't think that it would have helped?**

..description 95 No not for me personally, but say my sister in-law, they showed her a video or

96 something and she said it was

97 nothing like that when she was in there, it was much worse. But I mean then

15.Communication 98 again, she said all about the

99 noise, but I didn't think that particularly bothered me..it was just like being in our

100 house (laughs).

101 **I. You have had a C.T scan in the past, how was that then?**

20. Perceptions of the radiographers 102 Well I was a bit nervous because I didn't know what to expect because I've never

103 had anything, you know, I've

104 had x-rays, ordinary x-rays but nothing like that. They were good and explained

105 that, that you go in have it done

106 and then you come out and I had the dye put in my arm for that as well.

107 **I. Right**

25. Technological association 108 So ehm, but I did think that the C.T scanner looked more frightening when you

109 went in from the sheer size of it.

110 **I. How would you describe the difference between the two scanners?**

25. Technological association 111 Ehm the M.R one didn't look as bad as I thought it would be and I wouldn't be

112 frightened of having another one now

113 you know. I mean, I went ahead and had this today because I didn't want to go

114 home and worry for two weeks, you

115 know. When I was waiting to go in yesterday a lady came out and I said, "I'm not

116 going to be able to do it". She

117 said, "It's nothing". I could come out now and say that to someone else

25. Technological association



now, instead of .. you know, I think it would be worse to have an anaesthetic to go through it.

Interrupted by noise therefore concluded the interview.

I. Ummh, that's fine thank you very much

RAD1

I. Thank you agreeing to be interviewed. To start off with could you please outline your career to date?

Ehm qualified seven years ago and was a general radiographer for about 4 years, then I became a senior radiographer about 3 years ago. I did a post graduate certificate in MR about a year ago and I have been working in CT and MR ever since.

I. So why CT and MR then? What attracted you to those modalities?

Oh well it was MR mainly because ..well when I was a student it was the newest thing on the block, and I don't know I just took to it straight away, and I knew in my second year of university that MR

was the direction that I wanted to go in and it seems that certainly in a lot of trusts that CT and MR go hand in hand. I mean I'm not trained specially for CT, that's been a sort of bi-product of MR.

So yeah that's it but I'm glad because the new developments in CT have been interesting to me and certainly here we have multi-slice next door and it has been very interesting. MR though has been my main focus, it's something that I have always been interested in the possibilities are endless ehm and I don't think they are endless in the likes of CT. It's ..it's there is only so far you can go..

I. What do you mean by endless?

Well, everything there is the functional side of it and ehm the 'big wigs' are still finding out what MR

can do and everyday something new comes out and a new technique comes along and I don't think you get that in any other modality.

You know what Ultrasound can do, you know what CT can do, okay there are still developments and how to utilise them, that's fine but with MR there is still this sort of grey area where we don't know yet and that's exciting. It is right at the cutting edge of technology.

I. Is it just the technological aspects?

I don't know to be honest, I suppose I would have to say the patients really wouldn't I? ((laughs)).

You know I mean that is the basic tenet of the job isn't it, we are all doing it for one reason, and one reason only, and that's the patient on the table. Ehm I don't know, specifics, it's quite a difficult one that. I don't know it's just an overall attraction, I suppose so

28.0 Career development

29.0 modality choice

29.0 modality choice
30.0 Role models

29.0 modality choice

((laughs)) sorry..

I. No don't be sorry. Okay, so during your career have you been able to identify role models within radiography, I don't want names or anything just qualities that perhaps you admired.

((laughs)) ..yeah I suppose there have been yeah. Ehm you do come across radiographers who appear to be very very good in their own particular field. Ehm I don't see so many of them any more, maybe it's an age thing, maybe I have caught them up now and I don't know if there is anyone better than me out there. That's slightly tongue in cheek that is, I didn't really mean that as a self promoting thing. Thinking about it, yes I have come across one or two and thought they would be perfect for the new radiography consultants and I suppose they are the type of people who ehm.. I admire most in radiography. People who are sort of quite advanced within their own field, it doesn't have to be CT or MR, but I think to be honest, I don't want this to sound controversial, but I think that 90 percent of the profession aren't up to that standard and I don't think we ever will be.

30.0 Role models

I. Why do you think that is?

I think there is complacency in the profession which I don't necessarily think is just radiographers fault because we have been kept in our place for years by radiologists and again that's not having a go at them. I mean we cannot press any buttons on any machine or scanner without their say-so.

People have spoken about autonomy over the years we haven't got it, it's as simple as that. Any radiographer who tells you he is antonymous is a liar. The bi-product of that has been this complacency, just come in here 9 to 5, get told what to do, do it, get through the production line of patients and go home and they forget about it. I would say 95 percent of radiographers are like that.

I. Even now with extended role development?

Yes, even now...with this extended role no one is autonomous are they? Ehm barium enema radiographers for instance, they will stick the tube up the patient's bum, do the examination, and then take the films to the radiologist. Then the radiologist will say go and do this..or do that, so there is

30.0 Role models

no autonomy there, you are just taking the dirty end. The radiologist just sits in his office and you know reporting, I don't think everyone that I have had come across even in reporting has had autonomy there..although maybe a bit here in reporting.

I. So has all this technological development that has occurred over the last decade or so increased the status of radiographers?

((Long pause...)) no

I. Why?

Well the public don't know who we are for a start, so that hasn't changed...

I. Who's fault is that then?

I think that is probably our fault, no, no it's a combination, we have been called all sorts of things.

Wearing the white coat it's probably doctor, before I wore more of a tee-shirt and it was nurse

ehm.. I mean certainly, this must sound daft but...Have you seen the advert where the progress of

the child's recovery is on the television and they say it took so many doctors and so many physio's

and so many nurses to get this child better..no mention of a radiographer. I mean we must have

been there every single step of the way. I mean if you read trauma text books the basic trauma team

is doctor, nurse, and radiographer that is. The point is we don't get any recognition from the

radiologists and consequently the rest of the staff within the hospital don't know what we do. What

level do they think we are? And a lot come down and say 'do you need a degree to do this?' ..well

yes. I say 'I've been to university for four years so I can do this, and you just press the button in

front of you.' So who's fault is it? I think it must be ours because we haven't raised our profile

enough but also people don't know a lot about us, it's all doctors and nurses, I don't know the

answers.

I. Do you think that has improved with technology?

Probably yeah, you got a point there, they do because certainly in MR because they haven't got a

clue. I mean every doctor comes down having seen 20-30 x-rays

31.0 technological influence on the profession

and they will think they know all about them, the arrogance of doctors is 'I know best,' therefore rarely will they ask for your advice in general radiography. CT your opinion is valued but because it has been around a long time and they see a lot of CT's then they think they know what they are talking about. When it comes to MR they don't understand it and why it works, so we get the respect there yes.

31.0 technological influence on the profession □

I. Has this technological development been to the detriment of radiographers?

I think it has, the immediate thing that springs to mind is anyone who wants to stay in the general department, there doesn't seem to be much career progression for them. They will probably stay at a senior II grade, and those who have been doing the general work for 20 odd years and do not want to go anywhere else, who incidentally are highly specialised, are not recognised for those skills.

I. How do you think patients perceive your role here?

I don't know, ehm it's a mixture going back to what I said earlier I get called all sorts of names from doctor to nurse to porter, so I can't generalise, but I would imagine that most think I just take pictures, the clever doctor goes away and ..reports.

I. Would many of them refer to you as a radiographer?
Oh no, the odd one but rare.

I. So would it be fair then to so they you are almost like a 'means to an end'?

Yes that's fair, patients do ask if you can see anything and you are in a position to tell them, not legally, and that does annoy me sometimes. If you are in a position to put a patient's mind at ease instantly then I think you should be able to do that but you can't, so the poor patient has to wait for weeks to go back to the doctor to find out that the cancer he thought he had wasn't in fact there.
I'm not allowed to speak to patients in that way, just do my bit.

20. Perceptions of the radiographers □

I. Do patients perceive you as having one role or more?

I don't know...we do tend to do it all here, we book them, prep them, and everything, that is all due to change so yeah, I suppose they do see us as fulfilling lots of

20. Perceptions of the radiographers

roles. But many still think I am a doctor.

32.0 Barriers to communication

I. Does the fact that there is a physical barrier between you and the patient present any problems?

Ehm.. no I don't think so, I mean usually as part of the patter we do try and reassure the patient as much as possible. You know 'I can't stay in the room I have to go behind there but if you have any questions' but no you have to be truthful and ..well I can't stay in here it's radiation. It is all part of the patter you develop over the years. I think on the whole it reassures them quite well, ehm I have never personally that I can think of, had a problem, but I can see ...I mean patients have expressed a concern at being in the room on their own but I say 'well you're not on your own we are just there' and they see the window and know how far away we are and can hear them. So it's never been a problem, I don't think.

30.0 Role models

I. So how would you explain your occupation to a non-radiographer?

I would say thatehm...people do ask me what I do..it is strange because it always comes down to x-rays, even though that is not part of my job anymore. It always, always, comes down to x-rays because that is what the public know and you kind of go along with it. I say we can do x-rays, but I don't do it anymore I'm ..I normally ask if a member of their family has had a scan and they go,'oh with the tube,' that's the one. I find out what they know and take it from there. I try to explain in their terms and build it up as best I can, you know 3 years degree, postgraduate certificate you know, I go round and lecture, try and build it up. But at the end of the day a lot of people think we just press buttons and take the photographs and you have go to try and put them right.

32.0 Barriers to communication

I. Do you feel the scanning procedure is impersonal in any way?

Yes I think so definitely, especially ..I mean this is a bad thing to admit, but I've had days where ..I mean, to all intense and purposes it is a production line, no matter how you dress it up. Get the patient in, do the exam or whatever and if you are having a bad day..it can be very impersonal to the

32.0 Barriers to communication

patient because you don't talk to them as well as you could do ehm..and it's a case of lie down shut up, 5 minutes and I'll press the button, you see the doctor in 2 weeks time.

It can be very impersonal, if you are having a bad day or whatever if you are a poor communicator

as a radiographer, I don't think I am, but I've had days.

But you know it's the nature of the beast as well, you are under pressure to get waiting lists down and all that sort of stuff. I mean here we have appointment slots for 15 patients a day but we might scan 25 in a day, you know ehm so there is a time element and a pressure there that increases the impersonal nature.

18.Symbolic Significance

I. I have shown the patients pictures of the scanners following an examination to get their first reaction, what it symbolises to them, what sort of thing do you think they would say?

Well...tubes, but ehm body scanner, yes we can scan your body but we are not, but I think it represents serious illness. Now that only registered with me a couple of months back, when working in CT, a couple of patients said to me 'oh is this the cancer scanner?' Then I realised, because I hadn't realised before but 90 percent of what we do is cancer ehm..and there is like a progression, I think like a normal x-ray ehm..is for bones, ultrasound is soft things..they don't find cancer those scanners. CT that's the cancer scanner and that is the way I think patients think about it. As I say for the last few years that would be the public perception I think, so one of fear is I suppose what I am driving at. To go through the system to upgrade to a CT or MR scanner means you are really ill.

18.Symbolic Significance

I. A measure of illness?

Yep, if you stay with x-rays you are alright, ultrasound then well you know , getting a bit serious, but

if you upgrade to a CT scanner, you have only got 3 months to live type thing.

I. So where do you think those ideas and beliefs come from?

Probably from the clinicians and because there is a natural progression, you know the financial managers, I mean it's £10 a chest x-ray and £500 a CT scan, so

18. Symbolic Significance

ehm...there is a sort of natural progression, you start off with your chest x-ray. if they can't find anything wrong then go and have an Ultrasound and if they are still not sure then it's on to a CT scan so it goes on. The more technological it gets the more serious is your illness sort of approach.

I. Having worked in these units, do you have any stories of patients being unclear about what is happening?

Yeah, most patients certainly in MR, I haven't come across a claustrophobic patient in CT, 30% or 25% of MR patients are claustrophobic.

I. Where is that figure from?

Oh, that was an American thing 3-4 years ago, I would say in all reality it's more like 10%. I think it was 25% refused on the grounds of claustrophobia, I would say it is less. I am claustrophobic but I've had loads of MR scans. I didn't like them one bit, but I managed to get through it, you know what I mean, but yeah most people who have had a CT scan get up off the table and say 'yeah that's not as bad as I expected' and is certainly the case with the newer [faster] scanners, it's not claustrophobic, you are in the room for 5 minutes and ...they come here with a whole range of things, ..am I going to be put to sleep, it is going to take two and half hours, are we going to open them up..you know all that sort of thing. Certainly in CT they are pleasantly surprised that it is not as bad as they are told.

21. Moulding Preconceptions

I. Where do you think they get these ideas from then?

I think friends, relatives, neighbours and alike or the next person in the bed next to them on the ward. I don't think television helps either. I hate hospital dramas but on the rare occasion that I have seen them ..you usually see a CT scan and the impression given is that it's a very sort of ..daunting like a darkened room and the cross-lights are on, the laser lights are bright and everything moves slowly, the patient is on deaths door and there dramatic music in the background. It's a fact isn't it that most people get their education from the telly. People don't read books anymore.

33.0 Gender Compliance

I. I know you can't make a generalisation here but have

33.0 Gender Compliance

you noticed any difference in how well males and females seem to be able to tolerate the scan procedure?

Ehm..no, only off the top of my head I would say it was quite even the number of ..males and females that may have 'problems' and the number of refusals is well, I don't know, it would make a good mini-audit but I would say it was quite evenly spread.

14.analogies

I. Patients have used many of the terms already referred to coffin, tunnel ..have you come across any others?

I think you have gone through them all, I can't think no .coffin isn't one I've heard.

34.0 Claustrophobia

I. Okay one final question, you have had scans yourself, you said you are claustrophobic. Now are you actually claustrophobic? Or do you just think you are?

Well not in other situations really but I have unconnected with work ...ehm..I used to play rugby and I occasionally found myself on the bottom of a scrum and it was...not when I first noticed it, but that was when it would manifest itself sometimes, I ..don't feel it's claustrophobia but I can control it because I knew that any minute now everyone was going to get off me, so that's then not such a problem. I do though remember situations certainly, when I was younger, where I was sort of hemmed in and I knew I couldn't get out, that was panic really.

26.Memories

I. Is there any particular incident that comes to mind when you are in the scanner? Just general thoughts?

No there is one instance I can remember and that was at a young age..it's daft but quite simple.

Ehm the other kids I was playing with were playing with a sheet and I got wrapped up in this sheet and they tied a knot in the top of it and I couldn't get out, that's my very first memory of being enclosed and not being able to get out and kicking and screaming and...

26.Memories

I. And can I ask you, did that memory come back to you when you were in the MR scanner?

It did actually, because that is my very first memory of being in a claustrophobic situation ehm lifts don't bother me.. I mean I know some people can't ..it has to be a

26. Memories

tight enclosed situation if I can't move my arms or I can't move my legs. But yeah I did refer back to that, every time I've been in the scanner, I did refer back to that memory. So I do understand things from the patient's point of view but I can manage to control it.

23. Self

I. Do you feel isolated?

You do actually, you do ((positive nods))..and it's quite funny because ..you know how long the scan lasts, I mean I always tell the patient it will take so long, 'I'll see you 12 minutes' or whatever,

but when you are on your own and all there is is the noise of the scanner, 12 minutes does seem like

35 minutes, it really does and..it's ehm yeah. Actually, I've had 2 scans, 2 different types, I've been

to 2 different scanners should I say. This one here isn't very nice because you are on your own and

there is only the noise of the scanner. I was setting up a scanner at another hospital and they had

head phones and I knew I was going to be scanned so, I put them on and stayed in the scanner for

about 2 hours and I was fine. You know it didn't bother me at all. I don't know why, maybe

because I had music in my ears. So that was a great help but certainly in the older scanners like this

one, isolation is a big problem. I mean even though I work here and I know everything there is to

know about the scanner itself, you know I know how long the procedures take and I know there

are 15 people just through the window watching me, you do, you do feel on your own. How the

patients feel it must be 10 times as bad, you know.

19. Isolation

I. Thank you very much indeed.

RAD2

I. Just to start us off can you let me have your career to date please?

28.0 Career development □

OK. I qualified four years ago, in the April it was and I did some Bank work in the hospital I trained in for about a month and then I came here on a locum post. After a month I was made permanent and then I went as a basic radiographer in the department for just over two years. I'd come in on my imaging weeks to the MR scanner and then when one of the radiographers left I was trained up and filled in the slot while they advertised the post. I applied for the post and got it so that was OK and I've been working for about 14 months as a MR radiographer but still with rotation through the department and CT.

I Can you remember why you wanted to be a radiographer?

28.0 Career development □

I always knew that I wanted to do something medical, or something to do with people, I wouldn't have been able to sit at a desk. I looked into radiography and physiotherapy and applied for both. So it was a toss- up between the two, but I wouldn't want to do Physiotherapy myself now.

I Lots of radiographers have gone down that path. Why then did you choose MR, what attracted you to MR, can you explain?

When I was a student, I did my placement, the two things that attracted me were CT and MR. I don't really know why, but these were the things I enjoyed the most and seemed to take to these better than ultrasound or gamma camera. I just really enjoy it.

I Did the technology aspect of MR/CT appeal to you do you think?

I think its more the imaging side of it, the images you get up as a result of the scans, you don't tend to think of the technology, the technology wasn't the thing that attracted me to it, and the fact that you still have quite a lot of patient contact.

I When you say images, do you mean cross sectional?

29.0 modality choice □

Cross sectional imaging that you get out of it, the detail you get, yes.

I Do you think in your opinion that radiographers come into CT and MR for any other reason?

I don't know really, I suppose everybody's got their own individual reason, I suppose it's a natural progression for some people, I think you enjoy general radiography, I'm quite happy and enjoy general radiography, but I think people tend to go into it a lot of the time to progress their careers rather than an innate desire to ehm.. C.T or M.R . It's to get a senior post (laughs)
When you have the desire to do CT or MR, its quite often - things get to you, its quite ...you know.

I It can be fast track to senior post?

Yes, people that do it obviously enjoy it or I don't think they'd stick it or do the courses or whatever.

30.0 Role models

I So whilst you've been coming up the career ladder, we don't have to mention any names here at all, have you been able to identify any role models, particularly in CT and the MR fields that you've looked up to, you know you'd sort of like the qualities that they have, can you tell me?

Yes, when I was actually training the C.T Superintendent there was very encouraging and helped you to make the most of your abilities, and the week I spent in MR in another hospital they were very very good there, they actually let me progress as much as I could in the week I was there. Since I've been here I think the Superintendent especially, I mean her career has been absolutely fantastic, she really enjoys the work and is a real role model, she pushes herself to learn more to keep trying to grow, most CT staff are very encouraging.

I That's good, so all the technological advances since the last decade, do you think that has enhanced our status?

I think so, yes, we are a bit more renowned really for what we do, although I think the patient's perceive everything as being a scan, they do tend to say to you 'Ooh, you must be really clever to work this machinery and everything'

I think it is held in high regard, more so I think than general radiography when people just think you press a button when you know there is a lot more involved (laughs). I think patients regard the scanning modality as being higher status, you know.

I What about the medics, do they do the same thing?

No. I think they treat us all the same, you know, radiographers are radiographers whoever, MR, CT or the department, everyone is treated the same.

I Has this technological development been to the detriment of any radiographers.

I think so in some ways, I think that people who just want to practice general radiography sometimes don't get the promotion that they deserve for having the experience and expertise in those areas which are still very important. I think, you know a lot of promotion goes into the areas of modalities rather than people.

I. Can you tell me how you think the patients see your role in MR?

In MR? Quite different from anything else really, you spend quite a lot of time with patients, especially if they're nervous. I think patients, especially if they're nervous, are quite thankful that you've talked them through the procedure, give them as much confidence as you can, and they feel that you're always there with them throughout the scan, they are quite trusting. They do turn round and say 'thanks I couldn't have done it without you', all those sort of things. This is mostly nervous patients, the people who are confident just say 'thanks for your time' but if they are nervous and/or claustrophobic you get quite a good response from the patient.

I Do you feel as though you are acting in more than one type of role?

Yes, I think its something that I've perhaps developed since

30.0 technological Influence on the profession

20. Perceptions of the radiographers

20. Perceptions of the radiographers

20. Perceptions of the radiographers

I've been working in MR really, I suppose on a personal role, you get into more detail with the patients, you know about their apprehension and so on - its more of a psychological thing. There's no point in putting them on the scanner if they're in that state of mind, you've got to make them as comfortable as possible for it to be successful, because if they go on and they are not comfortable and are not trusting in you, you don't get the results you need or they won't want to go through with the scan. Afterwards there is counselling and stuff. You can't blame them for that can you? Oncology patients for example; because they're around here longer than they would be for an x-ray they tend to talk, a lot of it about the results of the scan, not just having the scan done.

20. Perceptions of the radiographers

I You find you're doing a bit of counselling when you're doing your imaging?

Yes, but that's alright, I like that, you don't realise you're doing it until somebody like you asks the question, you don't think I do this or that, it is part of your job and it is very rewarding

20. Perceptions of the radiographers

I So if you were to explain to a non-radiographer what your job is what would you say?

(laughs) ...my job, oh I don't know.

A radiographer at the hospital, normally I would say to them I take x-rays and do scans - CT and MR its very hard to go into more detail. I think a lot of it is that you are working in the NHS, patient care, but then you also do the imaging side of it.

I Do you go into the specifics of it, without getting too technical?

No I try to explain, I know its very simple, but on the other hand if somebody said well what - you give them a short answer and if you're having a long conversation about it you go into a lot more detail about what you do.

I That's quite interesting that. OK. Everyone struggles on that one. The physical barrier between you and the patient - you bring them in, put them in a gown, put them in a room, is that a problem, is it impersonal?

32.0 Barriers to communication

I think it can be, we do want the people to know that they can bring their own clothes, a lot of people do, bring short and tee-shirts, jumpsuits whatever, I think that if they are not comfortable wearing gowns, if they do read their leaflets they do have the opportunity not to have to wear a gown - the gowns are not so bad now(laughs), they don't feel as bad as with those short things with a slash down the back. I think because they are quite cocooned once through those doors, you don't get changed until you're in the inner part of the scan unit really, I think most people feel quite comfortable in their gown. I think especially if you've actually done a questionnaire on the patient previously they've got to know you and they feel a lot more comfortable, and I don't feel there's as much of a barrier then. You've not just taken somebody for an IVU or something, when you go 'hello, how are you, there's your gown, get changed, sit on that corridor, whereas you've already had five or ten minutes with them with the questionnaire asking them personal questions which is a bad enough thing to have to do, then you're asking them things again, I think they're more comfortable by that time, I think they've got used to the environment by then.

32.0 Barriers to communication

I And what about the physical barrier, what do you think when they're in one room and you're in another?

It really just depends, I think if the patient's nervous they can bring along a friend, or if they get into the scanner and then suddenly realise that they're nervous, most of us are quite happy to actually stay in with the patient, and we are able to talk to the patient in between the scans, I have stayed in the scanner room before now while we are actually scanning, I'm quite happy to do that.

I Have patients ever said that they feel isolated because of the separation or not?

Sometimes I think it quite an individual thing, some people are happier if you're speaking to them between, some people just like to go to sleep. If you get the impression that someone is nervous and is not happy, then you try to communicate up a little bit further. I think patients who seem to be comfortable are told OK 15 minutes, and if you need us or anything, give them the buzzer and tell them they can speak to me anytime, but if they are nervous I do try to talk to them in between the scans, it breaks down the barrier a little bit, if they know you're there, I know they know where you are but I always say 'we are just behind the window' if you need us press the buzzer', I think we should do more of this really, but sometimes you're busy setting the scan up.....

32.0 Barriers to communication

I. Keep in regular contact?...

Yes

I OK, I've shown patients pictures of MR and CT scans when I've interviewed them and say 'what does that mean to you, what does that symbolise to you'. What sort of things do you think they come up with?

Oh god, half of them will say it's a coffin. I think it's quite an intimidating machine, I think they've made it look attractive to the patient as they possibly can, I think we're lucky we've got a very good room, it's very light, very bright, very airy - I think it's as good as you can get with a closed machine but I suppose it depends on their fears whether they're claustrophobic, to them it's like being buried alive, that's one of the things I've heard 'I'm not going in there again, it's like being buried alive'. Somebody who is very comfortable with it might say 'I could have been in there all day, I could fall asleep. I don't feel it's as bad now as they were on the much bigger machine or people who've had it done on the mobile machines, because it was locked at the back, people will say now 'I didn't realise it was open at the back' and the fact that they can get out of their own accord if they wanted to, they can, you know. I think if somebody is confident and quite relaxed they think, oh it's just a scanner or whatever, I don't think CT would have any problems, not with the majority of people, I suppose people's perception has improved because they see it quite a lot on television and so on.

18.Symbolic Significance

I You know, people come along with beliefs what the scanner is and what the scanner isn't. Where do you think they come from?

22.Stories □

They come to the scanner and say 'Oh is that it'? I think the description in the leaflet is as good as you can and I find it very hard to describe the scanner to somebody because once you start 'it's a tube it's a tunnel' they've got a terrible impression of it, I think that you have to see it. Patients come and say 'Oh my friend so and so had a scan and they said it was like being buried alive', it always come back to people that they know or friends of friends of friends, and after they've had the scan done it gets worse every time the tales repeated, they get themselves so worked up, and then when they walk into the scan room they say 'is that it, I can do that'. I think a lot of it is rumour, I think when they see it on the television they know what its like, but I think a lot is rumour.

I Can you tell me about any stories that spring to mind of patients who come in?

22.Stories □

Ehm..a lady last week I think, she said outside that she was petrified, I went through it all and I actually put her on the scanner and just took it slowly, just took it a step at a time, used all the tools available to me at the time, put her glasses on and went through it all and then cut the scan times down so that we got some information, it wasn't the quality that we would normally get if someone was lying there for half an hour but we got some information.

I What were her main fears?

17.Coping Strategies □

She was very claustrophobic, she didn't like the feeling of it being close to her, with the glasses she coped, she got panicky in that environment and she didn't feel comfortable with it. Quite a lot of the time you can talk to these people and you can get the scans done, but the people who can't stay in a house with the windows shut and things like that, you know that there's nothing you can do can actually make them have that scan, but the people who are just nervous, sometimes you are able to talk them round, give them the trust I think it is. They know if you give them the button you will come in and get them straight off if necessary

17.Coping Strategies □

I In your experience is there any difference between males and females?

33.0 Gender Compliance □

Yes I think women who are claustrophobic are willing to have a go - if they don't like it we will bring them straight off again. We had a man in this week who said 'No I'm not doing it' and went out. He had got it in his head before he came that he would not go into the scanner - there was nothing that we could have done that would have made him have the scan. He sat down on the table then he said OK I'm going, nobody could do anything you cannot force anybody to do anything. I think the majority of women will give it their best shot and normally even if they are very claustrophobic they'll have a go but then they get quite upset when they haven't managed to do it because they had talked themselves into it.

I Its psychological with some of them isn't it?

Yes

33.0 Gender Compliance □

I Do you find any of the males put up with it, say its OK, its

a bit of a macho thing, just get through it and go?

33.0 Gender Compliance

Sometimes when you question somebody, with the men, you won't get any hint that they're nervous about the scanner or anything like that whereas a woman will say I'm petrified, they won't tell you initially, its only when you get them in the scanner they'll say 'No I'm not doing this' all of a sudden sometimes or you'll get them saying 'No, I'm going it's horrible' or you have no idea that they're even nervous about it. When you're doing the questionnaire part the women will say 'Oh, I'm really nervous about this' and that prepares you to do your utmost to help them, you give explanations to everybody but you spend an extra bit of time with people that you feel need it, and if you don't know that, you can't help.

I I assume you've been in the scanner yourself

Millions of times (laughs)

I How do you find it?

19. Isolation

I could lie in there all day, I've no problems with it at all, first time I went on was when they were doing the testing, I'd had one week's MR experience as a 3rd year student, not really done a lot, someone came down to the department and I said 'I'll have a go'. Its fine, I've been in head facing, my arms sticking out, on my back with my head in the middle of the scanner, all sorts, been everywhere. Its never bothered me but if you know the staff, know who's scanning you, I knew what they were doing and knew where they were, that removed my apprehension I'm not claustrophobic at all, and I knew because I knew them they would say 'stop your moaning and get on with it'.

I So what you're saying, because you knew the full side of it, the other side of it, you knew the people...

19. Isolation

I think that it makes you a lot more comfortable. I've never had any apprehension at all about the scanner, the worst bit is putting the gown on. As you say, knowing the environment, and knowing exactly what's going on makes you understand, you know what's happening.

I You mentioned the glasses, is that the same as the mirror?

19. Isolation

Same as the mirror, they're just black glasses, they've just got prisms in them so if you are lying down they are seeing out past their feet. We won't use them for ages and then all of a sudden we are using them loads, but they're there and they can really help somebody, because even if they're going to keep their eyes closed, they do open them sometimes and its quite a strange sensation, all of a sudden they are not getting this scanner here they are getting ... I found them 10 times worse than not having them on at all, you are looking up and seeing down to your feet really but to the patient it represents an escape route.

I Thank you very much.



RAD3

I. Could you please outline your career to date for me? What from start to finish?

28.0 Career development

I. Yes

Well I qualified in 1989, I stayed there for three and a half years as a basic and then I left, covering angios, C.T. all general work and got a pretty good grounding really. Ehm I did a couple of temporary jobs in between then I went to a Neuro centre as a senior II there, Ehm again M.R, C.T. angio's and general work and then went to another hospital as a Senior I. I only spent 15 months or so there and 9 months at there doing a rotational post again and then I came here. I mean I've been here now nearly two years.

I. Can you remember why you wanted to be a Radiographer?

28.0 Career development

You know I think I am like most radiographers (laughs) I didn't get the grades and I sort of fell into it ..oh that looks good, I'll do that.. Well I sort of thought about it in school to be honest, one of the girl's in school had actually applied to do Therapy Radiography, and you think oh yeh that looks good but its never well..promoted enough. We have discussed this before, it wouldn't be enough for you to go for it if you haven't seen it and certainly nobody comes to you to tell you what it's all about. Then when I'd done my 'A' levels, my grades were down, and there were places so I thought I 'll try that then. So basically that's how I fell into radiography. It wasn't so much, oh I want to be a radiographer, I didn't know what a radiographer was.

I. So there was no big appeal attracting you to it then?

28.0 Career development
29.0 modality choice

Other than it was working with people because I do enjoy people and working with people so. But, no, there was no, I specifically want to be a radiographer, but it was working in the hospital environment and with people so I thought I would try it. It wasn't being a nurse, I didn't want to be a nurse.

I. Can you explain to me why you chose M.R?

29.0 modality choice

Ehm...why M.R, (long pause) I don't know, it's firstly I enjoy the likes of C.T and M.R because you have much more patient contact, it's much more personal isn't it? But I felt with M.R that you get even more because I feel that you are getting a really good job done. If you have got that claustrophobic patient who really doesn't want to get on the table and you get them on, get them through the scan, you think , oh right, I helped them. Without sounding too selfish you know that you have helped them do that really, so there is that side of it I enjoyed and the actual imaging side, I think that its so... everyday is different. I mean, okay you have your routine lumbar spines, but every patient is going to be different and I just think the images that we get are fantastic, the things that you can do on M.R are just amazing, it's progressing so much and its just addictive. You know when I left to come here I was still doing the rotational post and I thought , I can't bear to go back to C.T because I'd spent about 6 months in M.R and I just loved it and thought I can't bear to go back and I know this sounds awful but to go back and do chest x-rays. I really just wanted to do ..just stay with the M.R.

29.0 modality choice

It's just that whole concept of..it's just my whole enthusiasm for it.

I. Right, did the technological aspects attract you?

Well it's both yeh, the technology does attract me, where it doesn't in other modalities, the actual technology, you know the physics, you do use it. You can use it to adapt everything and I feel that I can actually use my knowledge here whereas in other departments, well when do you ever worry about your x-ray tube again or your radiation physics, its all relevant and it keeps your level of enthusiasm to keep learning it. That's why I've started my course really, but I do enjoy the patient side.

29.0 modality choice

I. So are you staying then that you get a lot of satisfaction from helping the patients through the scan?

Oh yes, I do. But I also enjoy the point when I think, I'm not sure how I am going to do this scan but when I get the scan done..you think, uhmm that gives me a bit of a buzz as well. So I haven't lost that enthusiasm at all, but I did find that with other modalities, uhmm I've done with this now. However I don't think that I'll ever get that with M.R, you can always change something, you can always improve it.

I. And is that also because it is cutting edge technology?

Yeh, I suppose but I wouldn't like to say that we are the only ones who are. You know other modalities are progressing but I think at the moment M.R is progressing faster than anywhere else.

29.0 modality choice

I. In your opinion, do you think that radiographers come into M.R and C.T for any other reasons?

Well sometimes they have to don't they. I mean C.T radiographers they have to come into M.R to do on call. Most of them enjoy it, but they find it technically different, because it is so different from C.T. But I don't think....perhaps they get bored with doing general work as well don't you. As I've already said I couldn't bear to do a clinic of chest x-rays anymore.

I. Why not?

Because its boring, I know it sounds awful, but I got quite bored and I was a senior I thought I had more experience to do this, I've done better than this, I felt as if I could apply my knowledge elsewhere really.

I. You mean you could offer more?

Yeh, I think that is why you diversify don't you. Even people do in general, it's like some people go off and do bariums even though they are still in general, there's always that extra..you need a challenge don't you. You lose it just doing ..I shouldn't say general altogether, because if you're doing A&E I still think that is a challenge, because I used to love doing casualty. That's the only thing I'd say I miss now, a good trauma, but then that's a challenge in it's self isn't it getting those twenty films done and getting everything sorted...oh I used to love it.

29.0 modality choice
28.0 Career development

30.0 Role models

I. During your career have you identified role models? I don't want any names or anything, but could you tell me

what qualities you admired in these role models?

Uhm, definitely I think it was their knowledge, this complete knowledge of M.R and their enthusiasm for it all the time, it was always how we can change this, or alter that parameter, or do it this way. Yes it was just their general enthusiasm and knowledge and when you are sort of learning you think, god it's really impressive some of the knowledge that they have and that's what I'd like to be like.

You know to have that knowledge just there really.

30.0 Role models □

I. And are there any other qualities that you identified?

Well people skills as well, you know, they have really good people skills so these role models are now both managers, they are both superintendents. Even though I am at the same level as them in my career path. I wouldn't say that I was anyway near them at all. Perhaps that sounds daft but they are just all round genuinely nice people always enthusiastic never down on anything but always have that commitment to the job so there are quite a lot of things there really.

23. Self □

I. That's great, thank you. In your opinion has technological development enhanced the status of radiographers?

To who though?

I. Anybody, patients or staff

I don't think our position has changed much in the way of ..anybody outside the field of radiology, I know for example some of the people that I have mentioned I did feel their status, you know their relationship with radiologists is excellent and they really do take their advice on board. So I think from that point of view, yes the radiographer there is helping to teach the radiologist more now. This is almost a slight role reversal they are now telling the radiologist how to do and do that. I think maybe our status has increased a little bit, yeh, I can't think how to say it really. We are intelligent people, we are not just technicians that..yeh we do know what we are talking about. However, I don't know if it has changed much within the A&E environment because the girls, you always have such a struggle. I think that you get more respect from the registrars and consultants than you do the house officers. They still think that they know all the answers being a qualified doctor. Consultants however, usually say okay this is my field and that is yours now I'll take your advice really and I do feel that I get some of that back in M.R.

31.0 technological influence on the profession □

I. Looking at the other side of the coin, do you think that technological development has been to the detriment of radiographers?

There always will be I think, one is always left behind aren't they? There are always people who are not really .. not to say that they are not.. there is a role for everybody in the department. Ehm I think that the only detriment is that other radiographers might look down on them because they haven't done this course or they haven't gone into this modality and they are just happy staying doing the chest x-rays all day. But there again somebody has to to that so is it a detriment? I don't know I find that quite difficult really.

31.0 technological influence on the profession □

31.0 technological influence on the profession

I. So are you saying that perhaps it is their choice sometimes?

Yeh, sometimes it is circumstance I'm sure, but; people are happy and why should they feel pressured to move to have to do something.

20. Perceptions of the radiographers

I. Okay, if I can move onto the patients' perceptive now. How do you think patients' perceive your role, can you tell me?

I think that we are the nurse, the radiographer and the doctor all rolled onto one. We are everything we have just got to go in there[scanner] we are going to tell them all the answers when they come out ..we are always going to do a whole body scan on them and then we will walk out and cure them instantly. They see us as this really big person it's definitely not one individual in there, I don't know what they think you are but it is more than one person. Definitely.

20. Perceptions of the radiographers

I. So even if you are in there on your own and they only ever see you..

Well you are the person that does my scan and tells me what it is all about and tells me where I go next and, you know, everything. They see you as having all the answers, I don't know why and they seem to save up questions from elsewhere and come to you. I often find that they feel that they can talk to you easily sometimes when they come here and especially when you are doing a long scan. You know I have sat in there with patients for 45 minutes because they are a bit claustrophobic and they ask or tell you everything. So you then become a counsellor for them, you know the things people tell you, ..I don't know it's whatever they want you to be when you walk in. I don't know everyone is different, I don't know what feedback you had off the patients?

15. Communication

I. Well only a couple of people have mentioned a radiographer

Ehm well that doesn't surprise me, we are all nurses or radiologists. They seem to know those words.

I. Interesting, so why do you think they tell you everything?

Sometimes they feel safer, well ehm people..we are moving away from the idea that doctors are these all powerful beings but especially the older generation still feel that they are. So generally after the doctor you are the next port of call aren't you. They have been sitting there thinking uhhh..right I'll ask the nurse that when I go in, half the time you can be outside doing the questions for half an hour before you've even got in [scanner room]. So I do find that it is quite a long process from getting the patient from the waiting and through the scanner and out. I think we take on different roles as we walk through here.

20. Perceptions of the radiographers

I. What sort of roles do you think you have then?

Well, I suppose we start off as..well I'll ask the nurse because she is a uniform, the nurse that picks them up, and perhaps some of the nurses that come through here ..oh I'm not so sure about this scan, so they ask us, so now what am I? Then you are sort of counselling them, then you are persuading and cojoelling them, "I'll be here" then you sort of.. I mean especially if you have to

20. Perceptions of the radiographers

stay with them you become a bit more intimate in your conversations with them, I mean as I've said they tell you all sorts. And then when they come out you are the doctor they ask you what is on their scan and ..well why can't you tell me? You say well technically I am not qualified enough, which sometimes I get really annoyed by because I think, I know, I know better than that doctor, but ehm yeh the it [role] splits as you get to know the patient.

I. Is that the same in C.T do you think?

Ehm.. yes but to a lesser extent because you don't get to spend as much time with the patient do you? It's definitely the time that's the key, I think. I mean when we have the brain scan patients for instance done in 10 minutes, I don't think that you get that same rapport.

I. How would you explain your occupation, as an M.R radiographer, to non radiographers?

Oh god, that's really hard (laughs) well if you say radiographer then everyone looks at you blank. I wouldn't say that I am an M.R radiographer anyway I don't see why I'm separate for all radiographers but I would say a radiographer and everyone says uhm (infers a clueless reaction). Then if I say I work in x-ray , they say, right okay, or your just a button pusher. That's really hard to say what I am and I think that is the problem in radiography. How do you describe yourself.

20. Perceptions of the radiographers

I. Would you not feel comfortable telling people that you take scans..

Well yeh, but what does a scan mean to Joe Bloggs? You have got an MR scan, Ultrasound scan, C.T scan everything is a scan isn't it? So then you have to say what type of scan and oh! (long sigh) you mean the cancer scan, because M.R is always a cancer scanner isn't it. So yeah I would sort of say something like that..but I don't know it's the thought of all the technology that makes people switch off really. I don't know I'll have to think about that one. I'll have to ponder on that.

I. Okay, perhaps we could come back to that later. Does the physical barrier between you and the patient cause any problems?

Not really (surprised expression) patients or myself?

I. Well patients to begin with

Well sometimes because they would rather you be there but once they are in the scanner there is no point in you being there really anyway half the time. If they are quite settled then it's.. I don't feel that's an issue, but if they are remotely unhappy then I have no quams staying with them so. It's only a problem if the patient feels there is a problem and then I wouldn't go anyway.

32.0 Barriers to communication

I. Do you get many patients who present like that and want you to go in with them?

Ehm varies really, it's less rather than more; I try not to stay in most of the time, you know, not because I am worried about it safety wise.

32.0 Barriers to communication

I. Okay, do you feel the whole process is in any way

32.0 Barriers to communication

Impersonal for the patient?

Yeah...it probably is, they would really rather that you sat there with them because it's a strange environment: the trouble is you can't stay there all the time can you? I don't.. let it.. sort of bother me at the end of the day I probably have to go off and do the scan or go off and do something else so unfortunately due to circumstances there isn't a lot that you can do about it. So yes it is impersonal, but the whole hospital environment is like that isn't it..go somewhere and take all your clothes off, you know. I think that we are all sort of in that frame of mind when we come into hospital anyway, it is very impersonal; your just another body unfortunately. I think that the general public expect that, I'm not saying it's right but; perhaps it's an expectation.

I. I have been showing patients pictures of M.R and C.T scanners to see what the machinery symbolises to them. To see what the technology means to them as patients, what sort of things do you think they come up with from your own experience?

Coffin, or a tunnel I would say would be the main..or whole body scanner something like that. Most people think they are going to be enclosed in some sort of tomb, that's the main fear, a lot of the time when they walk into the room you can see the instant relief on their face. That's my...if they were worried about the scan, if they weren't ehm.... I don't know.

I. What factors do you think influence patients' knowledge and belief about the scan?

It's other people isn't it? The worse stories the worse fears that people have is when they hear the stories from other people and they always get exaggerated, oh they've been for this horrendous scan, or the television or the media has a big influence. So many people say they have seen it on telly and it's always a room that's dark and glumy on the telly isn't it? Every x-ray department is dark and horrid but the majority that you go into are really nice, so yeh I think it is other people and the media really.

21. Moulding Preconceptions

I. Can you tell me of any particular stories?

I wouldn't .. not one in particular, it's just like most of them that has a friend and ...the trouble is that the friend frightens them to death anyway and the process upsets them, or if they have been in a mobile van is usually the worse. Unfortunately the back of the van is at the back of the scanner, so yeah it does look enclosed, it is very dark and I think then that that idea is then planted into someone else's mind. They come along here and they are nearly in bits as they walk through the door and that's what I say to you, they look at the scanner and you just see them going oh thank god for that, you know, there's nothing wrong with that. You know it's instant relief and they just jump onto the table, but I wouldn't say that was individual that happens to quite a lot of people that does. So there is no one story but people who have been on the van, on the mobile that have these preconceived ideas. I think that once they start to phase them out hopefully things might get better. Oh and the older scanners, say if people have been elsewhere the scanners are 3-4

22.Stories

22.Stories

times bigger than ours and a lot longer so the whole body is enclosed..well I shouldn't say enclosed should I ? I'm at it now! They are in the tunnel though saying, oh my god, oh my god, it's horrendous. You find now though that scanner design has really helped and the fact that they are getting rid of the mobiles in favour of the static as well.

22.Stories

I. So you think that things will improve for the patients?

It will get better our claustrophobic rate isn't as high as other places that I've worked. For instance in another hospital we had one of these really old scanners and the patients were hysterical, absolutely hysterical, I had someone climb out of the scanner and they were in such a state, sometimes it's quite hard and you think you know ...logically you think why? But if you are that 'way-out' it must be horrific, it must be really horrific, especially head scans. But all the radiographers that come to work down here go on that scanner regardless or whether they like it or not, we have got one radiographer who can't stand it.

11.recommendations

I. Really?

Put her in and she asks to be pulled straight out, but I think that everyone should experience it because how can you sit there and tell a patient what it is going to be like when you don't know yourself, I think that is really, really important especially here.

23. Self

I. You have obviously been in, many times I suspect to try out different sequences and things like that, can you tell me about it ?

Yeah, I have to admit the first time I went on it I was going on for a pelvis; as I moved in I thought oh my god! Because you do think the top of the scanner is, of course it's all an illusion because there is quite a lot of space, but it's that initial going through. I always say to patients that it feels strange as you go through, because it is a bit odd, but that is the worse bit. Because that's I know how I felt and I even had the prism glasses on and after a minute or so I thought, this is ridiculous and I thought pull yourself together and I took the glasses off and I was fine. Even now every time I go in, it doesn't frighten me, but it's just that initial ohh. It's that awareness of... I mean it doesn't bother me, but its an awareness of ehm you moving into something and, well everything seems very close it does. Having said that, I've never had a head scan you know, so I don't know what it would be like actually. I'd like to put myself on with a head coil actually because I would imagine that it would be a lot different.

23. Self

19. Isolation

I have gone in with a neck coil and that was a bit different, I mean you are so aware of not wanting to move, I mean sometimes you don't want to breathe, the coil moving, everythings moving you know. I mean all this must be going through the patients' minds all the time it must be and for the 40 minute scans; well it's a long time to be in there. It must be awful for them.

I. Mmm, you mentioned that you had a patient climb off the table?

Yeh, only once and he was in a head collar and he managed to wriggle himself out.

33.0 Gender Compliance

I. From your own experience, do you think there is any difference between males and females in terms of how well they tolerate or comply with the examination?

Yes, yes I think men are worse they will.. if they don't like it will say, I don't like it I'm going home, whereas women will say they are really not happy, they don't know what to expect but I need it done it has to be done I want to find out what is going on, so they put themselves through it. Generally they will do it, come off and say, I hated every minute it was awful, some of them will burst into tears or take a big breath as they come out looking dreadful; but the point is they will do it. I find that the blokes are either quite blasé, right yeah, no problem and there really are no problem; you don't have to tell them what you are going to do, you can literally put them on the table and walk out or ..they are over the top and ridiculous.

I mean we have one gentleman waiting now, he wants a G.A. for a knee scan, I've told him that I'm not prepared to take that risk, it's a risk I've said no. He phones us everyday because he is worried about this and worried about that. Last week he phoned everyday, he was supposed to attend this week but phoned up and told us that he fell asleep and missed his appointment. We have done him before under a G.A but for a lumbar spine.

22.Stories

I. So what is he worried about, has he actually said?

It's just ..no he's never actually said to me but I think it's the fear of the confined space. It must like that feeling I had of oh god , I'm really close here and probably the noise and everything but this chap didn't even get that far so..It's just going in and a lot of people cannot cope with going in, they just don't like it.

33.0 Gender Compliance

I. Do you think that many of the male patients try to put a brave face on it, they don't really it but they don't say anything, almost like a macho image?

Sometimes, yeh whereas a woman would not like it but say so, some chaps don't say anything or they just don't do it.

33.0 Gender Compliance

I. I know that you offer patients the chance to visit the department beforehand if they are not happy, do you get a large uptake for that?

Ehm, not bad it depends, but I must say it helps, it does help, you find out one way or the other, right fine no problem. I mean they will either be fine, not sure but they will get themselves through it or there is absolutely no way. Then again it saves the patient having to wait for 3-4 weeks worrying and saves us wasting an appointment or put then on a G.A list. So yeh it does help, definitely, I couldn't say off the top of my head whether more males than females take up the offer.

I. That's it really, could just go back to the question about defining your own job to a patient or non radiographer

Oh no

I. What would you say?

The only thing I would say would be that I take pictures, at the end of the day it sounds so..the problem is that if you explain to the layman that you usually just take pictures but any other way I don't really think they

20. Perceptions of the radiographers

20. Perceptions of the radiographers

would understand. It doesn't make our role particularly glamorous. What have other radiographers said?

I. Well that they take pictures of the body with scans and mention cross sectional imaging in simple terms.
Yeh

I. It's perhaps something that we don't do very often isn't it?

20. Perceptions of the radiographers

Well as I say once you get to x-rays, it's rather like that really, I mean I work in x-ray and I work in the M.R scanner and then the only thing they hear about M.R is off the television. So they say, you must do cancer patients whereas you end up arguing well no it's this and that. That's the only thing I could say, I imagine this type of thing I do knees and spines and things.

I. One final question if I may, the leaflet that you send the patients, do they read it?

..description

No, some do some don't. You know the ones who do, they come in tracksuit bottoms no jewellery, ladies no make - up and then a lot don't. Some say that they read it and don't take it in at all. They say, yes I did read it, but they don't. I had one gentleman who said he had metal in his eye, so I asked him why he didn't ring us, well it was 40 years ago. So they don't absorb the information, have you ever had metal in your eyes, if you have please ring the department, ever doesn't seem to comprehend with 40 years. It's quite difficult (stern expression) so they don't always read it no.

Thank you very much

RAD4

28.0 Career development

I. Could you please outline your career to date for me?

Right, I qualified in 1985 and worked somewhere for two years, left there and I went another hospital and I was there for about 9 years, I think before I came to here, so I took a year out while we were moving and things like that, then went back on the bank staff. After that this senior II job came up for C.T and I've always dabbled a bit in C.T, you know, so ehm I applied for that and I've been doing that now for the last 18 months.

28.0 Career development
29.0 modality choice**I. Can you remember why you wanted to be a radiographer?**

Yeh, it's because I like machinery actually (laughs), I wanted to work with people but at the same time I didn't fancy nursing or something with that much hands on and I liked the machinery, so I wanted to dabble with that.

29.0 modality choice

I. So is that also why you think that you moved into C.T then?

Oh yes, yes because it fascinates me, you know the whole, you know the ..vast amount of equipment and the buttons and everything, yeh it completely fascinates me.

29.0 modality choice

I. Is it the technology behind it or the fact that you can work with computers?

Yeh it's the fact that you manipulate things so much that's what I find so interesting so yeah.. I have to be able to understand what goes on in order to make that happen, I mean I am no good at not understanding. So that's probably an element, but the fact that you really can't go wrong in that you can manipulate things to how you need it, that's the most interesting.

30.0 Role models

I. In your opinion then, do any radiographers go into C.T or M.R for any other reasons?

Yeh it's clearly a fast way into gaining a senior job, that in the past was probably the main reason why people went into it, now perhaps less so because we are so short on the ground that people are getting senior jobs for not specific things necessarily but because they need radiographers.

I. Okay, during your career have you been able to identify people as role models?

Oh yes, yes

I. Can you tell me about them?

Just looking at the chap I am with now in C.T, he knows his stuff so well that ehm he is a definite role model from the technological side of things, I don't think that I could ever know as much about 'my machine', probably because it doesn't interest me as much as it interests him, you know. Ehm he is constantly updating what is going on equipment wise and making sure he understands it, it was one of the most influential factors in making me come on the C.T course. I had dabbled in C.T for years and where I worked before the Superintendent didn't have any provocation in C.T, I mean he knew what he was doing but not particularly why or the pathology behind it or anything like that, so with the difference in the two I thought, 'My god there is an awful lot to learn that I don't know'. It was the knowledge.

21.5 technological Influence on the profession

I. Overall, do you think that technological development has enhanced the status of the radiographer?

.....No not at all, I think politically nurses appear to be coming more and more well thought of perhaps and ancillary staff less and less, so we are being looked at more as ehm technicians in an American way and less and less as a profession actually.

I. Do you think that technology is a reason for that?

No I think it's just people's view, I suppose that it has always been the case to a certain degree that it's how people perceive hospitals and staff within it.

I. You have probably already answered this but do you think that any of this technological development has been to the detriment of any radiographers?

Yes probably because there is less hands-on, so it looks as if ehm competence wise all we need, I mean how many times have you heard people say well. 'You only need to press a button', you know and I think that is becoming more and more so. It appears that you don't need to have any expertise. You just need to press a button, and especially somewhere like C.T where people from other departments or specialists or whatever come into C.T and you are only sitting there playing with a computer aren't you, you're just sitting there having an easy time of it and not doing anything other than pressing the odd buttons really.

20. Perceptions of the radiographers

I. Can you tell me then, how do you think that patients perceive your role?

Well I think again we are definitely considered as just button pushers and ehm even the radiologist and not considered ..here the radiologist just pops in and out and very often because we are a smaller department we have time to go and have a chat with the patient and they often ask what's this or what's that. I don't think that even the radiologists are looked at as consultants or anything, I think we are just computer operators, button pushers.

22.Stories

I. You think that the patients view it like that as well as the staff?

Definitely yes, I mean it's the chicken and egg syndrome really, I mean I think that perhaps if patients get that idea then perhaps they are the ones that pass it onto the nurse and other stuff, I don't know but it definitely appears to be the way it is I think.

20. Perceptions of the radiographers

I. So what do they seem to think you are a nurse or technician or what?

Technician, I mean I think the whole thing is becoming very Americanised, they see these things on television and they think we are all the same don't they. There was a chap on the television who murdered someone in France he was described as a technician and he a radiographer, but that went out all over the world.

32.0 Barriers to communication

I. There is obviously a physical barrier between you and the patient in C.T, does that cause any problems do you think?

Ehm I think it can do and in situations like that I tend to almost make light of it with them by waving to them.

32.0 Barriers to communication

I. Why do you think you need to do that ?

Just so that they are aware that you are watching them and being there for them even if you are not physically with them.

I. Do you find that is a way of communicating with them?

Oh, yeah because I don't think...I mean I don't like talking over the intercom because I think that is impersonal as well so I tend to say, 'Look I am going to go out through here now' and if they are nervous, I don't do this for everybody, and I say, 'I'll give you a little wave and if you have any problem you just wave your hand and I will be there you know.' I think because they can see that you're physically almost with them it helps them a lot.

I. If you were going to describe your occupation to a non- radiographer what would you say?

Ehm ..that's a difficult one (laughs)

I. I don't know why radiographers find this difficult ?

Ehm.. well I would probably tell them the same sort of thing that I tell patients, it's very much like an ordinary x-ray but we take sections through the ..well whatever area so that we are looking in more depth, so I would probably say the same sort of thing, perhaps put it in another way.

30.0 Role models

I. Going back to patient care, you mentioned that you found the intercom impersonal, do you think that the whole experience of having a scan is impersonal?

Oh yes, I do.

I. Can you tell me about that?

I think that generally even in my department we can be quite busy and I can imagine that most hospitals and I know that most hospitals are a lot busier than we are; I mean have got the odd 5 minutes here and there if we want to nip outside and get them changed. We do all that because we haven't got a helper, so we can have a chat to them and they are back and forthwe get to know them from staging and things like that. But you have many hospitals where the radiographers stay in the unit and they don't even meet you before they come in and I think that must be awful because they have no continuity. I mean when I went to a bigger department to see a spiral C.T scanner, I was amazed at the throughput and the fact that nobody spoke to the patient at all other than really to stick them on the table and go away for a few minutes then come back and get them off and the next one on. I mean I think that must be awful for a patient, I personally would not like to work in that type of environment. I don't think the patient will get anything from it. They wouldn't then go out and say to other people, 'It isn't as bad as I thought it was going to be', because the whole thing was such a whirlwind that they wouldn't have had a clue even if they had read the information what was going on. I think the fact that they don't have any contact for any length of time with anybody is difficult for them.

32.0 Barriers to communication

I think generally patients expect certain things to happen, for example to be changed into a gown for certain procedures like the scan. I think the thing there is to allow them a lot a privacy to change into their gowns and things but then also not to have them having around. You

32.0 Barriers to communication

know I can always remember going to have a gynae thing, you know, (laugh) and I was told, 'Nip in there and take your knickers off' (laughs) and I said, 'Well I can sit here and then take them off in the privacy of the examination room, it will take me 3 seconds', but the nurse was adamant. So there I was sitting in the corridor with a lot of other patients with no knickers on (laughs), and you know this has stuck with me really, such an awful thing to do to someone when you don't need to do that. If they could just change before they are due to come in, you know, so I just leave it until they are next in and get them changed after their gastrograffin and simple things like that. That moment just stuck with me, why do you have to sit there with all these people feeling so vulnerable when you know half of them also had no knickers on and the other half were thinking, 'What are they sitting there with no knickers on for' you know (laughs).

I really think that we all gain a lot from being a patient ourselves because we can see some of the patients' perceptions can't you.

I. Do you think that you have several roles in C.T or just the one main role?

Oh no there are several roles, the most important is not actually the scan, but in making the patient comfortable for the scan. That will definitely pay dividends in the long run because they will go out and tell everyone else that it was okay, so that is certainly one of the biggest roles. I think also if you can get them to be comfortable the easier it is for them to have a scan so the less likely they are to wriggle or move for you or to think that they need to get out of the machine or whatever, you know.

Even if this takes you half an hour, you know, especially someone from the psychiatric unit or whatever and it pays dividends because at the end of it I think, yes I did that.

I. I have shown patients a picture of a scanner to try and see what it symbolises for them, what it means for them, what sort of things do you think they have said from your own experiences?

Well I would say sort of washing machine, tunnel ..well those 2 things is how they describe them to me. Polomints as well is another one.

I. Where do you think those terms come from?

Well the shape of the machine I suppose, the fact that it's a big machine and a tunnel I think. Many patient assume that they are not going to come out the other end, if you take them in it is useful to go around the other side and say, 'Look here I am,' then they know for sure that you are at the other side. Hopefully they see it as less of a tunnel then they have an escape route should they need it.

I. Can you tell me about the factors that influence beliefs and knowledge and did you think these are very powerful influences?

Oh, yes definitely, if you look back at being in school you are more influenced by your peers than your parents, you know. I think that everybody is more influenced especially if someone has a horror story to tell, you

know it is much more exciting than telling about what has really happened. If you were to go into hospital and it was all a bit mundane wouldn't it be awful, you've got to have some sort of horror or you know ..

I. Have you any particular stories that you can tell me about from patients in C.T?

Well I had one chap, I never think of C.T as being particularly noisy, that is usually M.R, but C.T ...:this chap just did not like noise, any sort of noise, (laughs) and I was stuffing swabs in his ears and microporing them down so that he wouldn't ...and I still, you know going back to my waving and things I was going like this (swaying from side to side and waving arms in the air) all the way through trying to get him to stay on the table. He was really mad and when I was talking to him it all went back to when he found somebody dead, his father or mother or somebody, and at that time the church bells were ringing and ever since then he couldn't stand the noise so it was like, you know if you talk to them there is usually a reason behind why they are afraid of something.

32.0 Barriers to communication

I. Getting that disclosure is sometimes difficult is it?

Yeah oh yeh

I. So what did you make of this then?

Well he was associating noise with a traumatic event and I found that really interesting. Going way back when I did C.T a few years ago we had the old 60 second per slice unit and we used to get quite a few patients from a Psychiatric Hospital and the head scanner was quite tight to the face and this man escaped from the scanner, I ran in and he punched me in the stomach and made a bid for freedom. But that was when it was 60 seconds and the time was just too long for many patients. I think that things are a lot better now even on our scanner.

23. Self

I. Have you had a scan yourself?

Mmmm

I. Was that M.R or C.T?

M.R

I. Can you tell me about your experiences there then?

It was for my neck, so obviously I had to go all the way in and I found it ..I can relate to patients because I found it quite distressing you know, obviously I didn't show that because they (radiographers) would think oh my god, how embarrassing, but I can imagine why people don't like it because it is very close to you. You do feel as if you are trapped, you know you would be able to get out if you tried hard enough I am sure. I felt trapped I felt it was noisy as well, so ehm, I made myself shut my eyes and think about something else which is fairly easy to do, isn't it? But I am sure other people, if they found themselves totally focused on that would find it very difficult to stay in there.

23. Self

19. Isolation

I. Can you remember what your thoughts were inside the scanner?

Oh just trivial things what the kids were wearing and other little things.

I. Did you find the time element strange?

23. Self

Yes, totally, totally lost track of how long I had been in there and I had taken one of my daughters with me, I mean she 11/12 and she was sitting out in the waiting room and I was aware of how long I had been in. I was thinking how long have I been in here and is she alright out there, so those influences were making me a jittery as well perhaps. I felt cut -off and isolated but more than anything not in control, I think that is the thing, a lot of people don't like not being in control. I am certainly one of those.

23. Self

I. So why did you feel that you weren't in control?
Because, I wasn't running the show (laughs) there was somebody else doing the scan, somebody else telling me how long I had to be in there and what I would go through and there was nothing that I could do about it or change it and I found it quite difficult.

Thank you very much

RAD5**I. Could you outline your career to date for please?**

Trained , qualified in 1994 and worked at another Hospital when it was a proper hospital. In 1995 I got a job here but the two hospitals were actually merging at that time anyway. So I transferred to here and I've been there 6 years, senior II two years ago and doing C.T for the last 2 years in and out of C.T.

28.0 Career development

I. Can you remember why you wanted to be a radiographer?

Yeah, because I did my A' levels I didn't want to go to university because I wanted to bum around and enjoy myself, so I did that for the summer and my mum said, 'Right you need to get a job' so she packed me off for interviews and one of them was in x-ray office, bearing in mind I can't even type, I wore a short skirt that day and got the job! So I worked in the x-ray office for a year, it was good a 9-5 job and everything but I got a bit bored, but that radiography business that looks alright, so I applied and got on the following year.

I. Can you tell me what attracted you into C.T ?

Because I had been qualified a few years and I was bored with general radiography, it wasn't a challenge and I could do it with my eyes shut. I just wanted to do something where I could go in and use my brain.

29.0 modality choice

I. Did the technology in C.T appeal to you?

Ehm.. not so much the technology, but the anatomy side and the pathology side of it, looking at cross-sectional imaging rather than plain films, it wasn't so much the technology.

I. Right, it was more than images then?

Mmm

29.0 modality choice

I. In your opinion do you think that radiographers go into C.T or M.R for any other reasons?

Usually for promotion, it's usually one step up the ladder if you go into C.T or M.R, you can't go in at basic grade, not at our hospital anyway. I think it's also boredom with plain films.

I. In your career, albeit fairly brief I suppose, have you been able to identify any role models, mainly in the C.T line to whom you have looked up to?

Definitely yeah, and also there are people to whom you think, they are awful at this. But there a couple of people at work who really know what they are doing and they certainly know their stuff. You tend to ask them things rather than asking somebody else.

30.0 Role models

I. Can you tell me what qualities those people have got? Qualities?

They understand what they are doing, they are not just monkeys pressing buttons they can explain it further for you. A lot of people say, 'Press this, this, and this will happen', whereas these other radiographers will explain that you are doing something for a reason. They just really know their stuff, they have obviously learnt a lot over the years, it's experience as well and they just know an awful lot about the subject.

30.0 Role models

I. So it's really the knowledge then?

Yeah

I. Okay, so all this technological development that we have had over the last decade or more, do you think that it has enhanced the status of the radiographer?

Ehm, I think yes with the clinicians in the hospital, when they come down if you don't know what you are doing it can appear to be very complex and confusing. But I don't think to the members of the general public it has because to them we are still the nurse. They don't always see you operating it either because they are inside the scanner, they don't know who is operating it. In the hospital yes, but outside the hospital no, unless it's somebody that knows you and you talking to them about your job. But to Joe Bloggs we are still nurses.

30.0 technological influence on the profession

I. Well do you think that all this technological development has been to the detriment of radiographers?

No I don't think so, I think that it can only push us forward, but I don't think that we are being recognised financially for what we are doing. But I don't think that it's a detriment to radiographers to move on.

20. Perceptions of the radiographers

I. You mentioned the general public before, how do you think that the public perceive your role in C.T?

I think we are, as I said before like nurses, we are there to look after the patients, we are there to make sure they are lying in the right position, there to make sure they are not ill, there to make sure they know where to go next and there to make sure they get home okay. I don't think they realise what goes on behind the scenes how much we actually do, I don't think they understand that we know what we are looking at. They think that we just take pictures and that is the end of it. They don't realise that we have to know what we are looking at.

7.misconceptions

20. Perceptions of the radiographers

I. Do you mean we have lots of different roles?

Yeah exactly we have all these roles, but I don't think that the general public sees it like that. I don't think they realise just how much training we have got for the job you do, it's, 'Oh yes nurse plock us on the table and off they go', I don't think they know what goes into it at all.

20. Perceptions of the radiographers

I. So what different roles would you say you have then?

Well to be honest the bit that the patient sees, giving them the drink, giving them the injection, that's taken away from us now a lot of the time; that's healthcare assistants doing some of that. So we really are a lot more behind the scenes now than we were before. You mentioned about hands-on, well we don't need to be hands-on at all because the healthcare assistant can position the patient for you. You don't even need to see the patient yourself. They only need to be identified; you don't have to have any contact with the patient at all. So you are a lot more on the technological side of it than the patient contact. I think that has been taken away from us an awful lot.

I. Do you think that is a good thing?

I think it is a good thing for keeping the waiting lists down because it saves a lot of time the health care assistant has done it all for you. You can get a lot more throughput through the scanner, but I think from the

20. Perceptions of the radiographers

patient point of view, I don't think that it is because they are asking them questions and they cannot always answer them, and the trouble is you don't know what has been asked because you haven't seen the patient apart from saying, 'Hello what's your name, what's your date of birth, great in you come then'. I might go on and ask them if the procedure has been explained to them and then out you go again.

I. So many of your traditional roles are now being done by somebody else?

Yeah.

I. There is a physical barrier between you and the patient when you are doing the scan, is that ever a problem?

Ehm, from which point of view?

I. Yours or the patients?

Well I don't even think about it, is it ever a problem? No not really, it's only ever a problem if something goes wrong and we have to get in there quickly.

32.0 Barriers to communication

I. Is it an issue in terms of communication?

Well I suppose it is really, (suprised expression) when it comes to holding breath and things like that because you're behind the screen shouting it out to them. But I don't know really whether it's a problem or not, don't know.

30.0 Role models

I. How would you describe your occupation to a member of the public?

It's funny we have had such a situation recently, we said that we are specialised radiographers that take specialised images using radiation that is very quick. You need to think of it as 3 dimensional scanning.

I. Going back to patient care, do you think the whole process of the patient coming in, getting the gown on and lying in the scanner is in anyway impersonal?

.....Ehm I think it is because you have no time to spend with the patients.

32.0 Barriers to communication

I. Can you tell me about it?

Well we haven't got time to spend with the patients to ask why we are doing this or that. Why they need the drink, why they need the injection, I think it is impersonal yeah. I think the patients must feel that they are on a big conveyor belt, one in and one out, because they have been sat there at various stages drinking and being asked questions, it is a big conveyor belt and I think that it is very impersonal yeah.

18. Symbolic Significance

I. I show patients a picture of a scanner at the time of interview and ask them what it symbolises or means to them with the very first thought that springs to mind.

What sort of things do you think they come up with?

Oh I think the one's that come to us are thinking cancer scanner, that's what the 'C' stands for cancer scanner. I think it is fear, it's the unknown, it's a big noise, they all expect that they are coming to an M.R scanner anyway. It's fear, fear of what's going to be found not

of the equipment, it's why they are there that the fear is. Even if they are not scared of the machine they are scared of what the result might be.

18. Symbolic Significance

I. You said the 'C' was for cancer scanner ?

Mmm cancer scanner, that's what the patients say and I think it is also an in-house thing as well. I mean many of the patients that come are for query cancer or tumour it's used by us as well, jokingly we always refer to it as the cancer scanner. I mean patients come along and say, 'It's the cancer scanner', I don't know whether they have heard it elsewhere but yeah they say that all the time and I hear it a lot.

I. So they make that leap then in their own minds?

Yeah, they are having something investigated they don't know what it is, a lump or something not right or lymph nodes and it's a cancer scanner.

21. Moulding Preconceptions

I. Patients have firm beliefs and knowledge as you have already mentioned. Where do they come from and are they powerful?

The neighbours next door the people across the road, people who they have spoken to. They are definitely powerful, they have a preconception before they even come in the door of what it is going to involve. It's whatever Joe Bloggs down the road has told them, even the one's that have read the leaflet still think...they don't seem to understand that it isn't an M.R. Every person thinks that it's the tunnel, they don't think it's the polo, it's the pack of polo's, no matter what they have read or what they have heard.

20. Perceptions of the radiographers

I. The pack of polo's?

Yeah, the pack of polo's is the M.R, Polo is the C.T

I. Right, where has that come from ?

Well that's what we use here, you know they come in and we say, 'We are just doing the polo today, not the packet of polo's'. I think it is just us you know, but that is how we explain it to the patients. It's the polo not the pack.

22. Stories

I. Have you any particular stories that spring to mind of things that the patients have told you?

It's mainly positive really, you know if they were uncomfortable lying there for that amount of time or their back hurts, but on the whole it is good such as, 'Oh that was quick or that wasn't as long as I expected or that wasn't very noisy', because of the preconceptions of what other people have told them. They are generally quite surprised and it wasn't as bad as they thought.

3. expectations

I. So is it almost like a relief?

Yeah, they say, 'That wasn't as bad as I thought'.

I. Is there anything that springs to mind in terms of what the patients were expecting to happen?

It's back to the M.R thing again, it's just that they all expect an M.R and a tunnel..and a noise, so they expect that and think that they have to lie there for ages.

33.0 Gender Compliance

I. Do you notice any difference between males and females in terms of compliance?

Females generally put up with more, I know that is a

33.0 Gender Compliance

generalisation but they appear to be prepared to go through quite a lengthy scan and put up with the injection a lot more than males. Males are a bit, 'ohh I don't like this, oh I don't like needles', they whinge a lot more; perhaps that's a generalisation from a female perspective.

I. Final question really.....
Ask me about Asians?

I. Okay then tell me about Asians?

Asians seem to have a lower pain threshold and a lower tolerance threshold, they seem to moan a lot more and want to get off the scanner a lot quicker and seem to be in a lot more pain. We have what we call..I shouldn't admit to this, but M.P's and T.M.P's, M.P's are Much Pain

and T.M.P's are Too Much Pain to lie here (said with great expression).

I. Again is that something you use in everyday work?

Oh, yeah I mean we don't have a very big Asian community but it has been noted that if there is an Asian person for a scan, it's, 'Here we go'. They do seem to have a low pain threshold.

27.Compliance

I. Is this pain rather than fear?

Yeah, you give them an injection and they are nearly leaping off the table. No matter what is wrong with them they are in more pain than say the next person for the same sort of complaint. It's just generally a lower pain threshold and a lower tolerance I don't know if there has been a study done?

I. How interesting, I think there may be some work done on that but nothing that springs to mind. Finally, you have had a scan yourself?

Yes, M.R not C.T

I. Can you tell me about that?

Well I was in agony so I just wanted to get it over and done with, I had snapped my Achilles tendon. Oh and I had an M.R scan for my knee an ankle when they were doing some research. I found it uncomfortable because I was in pain and I found it difficult to lie still, but I can understand where patients fear comes from because unless you are in the room you don't realise just how noisy it is. I think that if I were to go in with my head in a head coil, I don't think that I would be happy. Not lying there with all that noise and so enclosed and I'm not claustrophobic at all, but I am sure that I would not be comfortable. It's a fair amount of time that you are in there, you can't see anybody, I mean are they (radiographers) still there ? 5 minutes when you are typing or busy goes really quick, but if you are lying there in a coil in a tunnel with all this noise then 5 minutes is a life time.

19. Isolation

19. Isolation

23. Self

I. Did you find that you lost track of time in there?

I seemed to be in there for ages, 'hurry up are you still doing this', and I tried to work out how long I had been in there. You know, 'that must be 3 minutes 2 more to go' then I would stop and start again.

I. Can you remember what you were thinking about in the

scanner?

Ehm yep but not related to the scanner, thinking oh god I've got to go to theatre type of thing. No everyday hates really.

I. So you didn't find it to be a pleasant experience really?

No, I didn't enjoy it no, but at the end of it I couldn't wait to go and see the images because it was me, whereas the patients don't get to see their images or results I think that if the patients saw what had been done they would be quite impressed. It makes it worthwhile lying there, I knew my results would be immediate.

I. Thank- you very much indeed.

11.recommendations

RAD6

I Can you just outline your career to date for me?

Well I trained and did the diploma about 15 years ago. I finished - I worked there for a few weeks and I got a job elsewhere. I worked there for a week, got married, went on my honeymoon and basically I was a radiographer there for about 5 years and then I had two babies and went part time. I continued as a basic grade radiographer, there wasn't much I could do about promotion really, not for a part time radiographer. Anyway I had my children and started getting interested again, so I pushed to do CT and pushed to get a part time Senior job to get into specialities which I did and I've been a part time Senior ever since.

28.0 Career development □

I Can you remember why you wanted to be a radiographer?

Because I wanted to train to do something to get a job in rather than - because originally I went to a Grammar school and it was expected that I went to University and I was originally going to do science because I had a flair for science and I was actually going to work in the lab and do experiments..Or. I was destined to go to University, but I met my husband when I was 16 - I didn't want to go to University, I wanted to train to do a job so we could set up home together and start a family, so I trained to be a radiographer and you actually got paid, at that time you got quite a good bursary as well and then you actually qualified to do a job. That's why. I had a science background as well, this was something I could go into, I was interested in Physics.

I So the CT, you've actually said that you had to push to go into CT. Can you tell me what attracted you to CT?

I just think the images are wonderful, I think the technology that we have nowadays is so much more interesting and dynamic than the basic radiography. Actually I think actually what it is for me is that nowadays we don't have the time to spend with the patients, I know we don't in specialised techniques anyway but especially in general radiography we do not have the time caring for the patient like we used to. Its all rush rush, like a conveyor belt, you get your patients in you get your patients out, you hardly get time to speak to them, that's the way I feel at the moment, you're under pressure to take as many x-rays as you can and there's not really a great lot of fun in it anymore.

29.0 modality choice □

I Is it the same in CT and MR do you think?

They try and get people through, but because it's a bit more specialised you have to take your time in doing it a bit more and because C.T of a higher dose..They expect you to learn more about what you're doing to enable you to do the job which is why I've got to go on a course and why I'm getting extra training now. The radiographers in the department don't seem to think that they need any extra training to do that or any extra knowledge, so they don't get it. I got this thirst for knowledge again, I lost it after having my babies, 'cos your brain goes to nothing.

I In your opinion, do you think that radiographers go into CT/MR for any other reasons?

29.0 modality choice □

Probably for promotion, they know they stand a better chance

29.0 modality choice

for promotion in those modalities than staying in the main department. There's no promotion prospects, not many that I know of in general, you have to specialise to do mammography, CT, MRI, Ultrasound, to get the knowledge and promotion. I suppose some people can get that information if they've got that go in them to go on chest imaging courses and the red dot system and things. Things are getting better actually, there's been a lull but I think it will pick up now I think, because of all this reporting and things that are coming around. I think eventually we'll train radiographers to do chest reporting, A & E reporting, I think its going to do the profession good.

I OK, so whilst you've been going through your career, have you been able to identify specific role models? Don't give me names, particularly with CT skills?

My Superintendent and Senior 1 when I first went into CT, when I first started as a Senior 11 and they started training me how to use it. I thought, this is how I want to be, I want to have this knowledge that they've got. They've been there for 10 years, well right from the very start, they did the CT course, and I thought the knowledge that they've got, they know what they have to do next, they even anticipate more than the radiologists really, they're in there day in and day out. That's the kind of knowledge that I want, I want to get in there and do it.

30.0 Role models

I Can you tell me of any other qualities apart from the knowledge?

One of them is very good with dealing with patients, the other one isn't so good in dealing with patients. I think more than anything the fact that they are respected by the Consultant and other Consultants and other staff in the hospital for what they do and the expertise that they have got. More respect than what they get from the patients because the patients don't really know what they do- they think they're there just operating the machinery and the doctors have got all the knowledge. They probably know more than the radiologists, they're just in and out of there.

I With the technological development that has occurred in radiography within the last decade, do you think its enhanced the status of radiography?

In whose eyes? Not in the patients' eyes, no. I think it is doing like within the hospitals yes, because the MR people in our hospital get things done for the Consultants, they're getting results that we never had before and the Consultants are pleased about that and they respect it and they recognise that they have set up these systems that are going to get them the results.

31.0 technological Influence on the profession

I The opposite of that I suppose - has this technological development that's occurred been to the detriment of radiographers?

Oh probably yes, because we've got part time staff, similar to the way I was, with children who are still interested in radiography, want to do the general radiography and basically the department couldn't run without them, but I think they're not getting the training now and they're not getting a look in because these techniques aren't so special now; we're finding that we can't rotate

31.0 technological influence on the profession

people through because we haven't got the staff. Really this is the only way I can get into these modalities, by doing the course, they've got to let me go in there more, otherwise it would be once in 8 weeks I'd go in CT and you don't get the experience then, especially being part time I'd get two and a half days every 8 weeks. I mean that clearly isn't good enough. The other staff in the department are even worse off, they don't get through at all, so yes, it probably is to the detriment of them if you think about it, but that's a staffing problem rather than the actual technology.

I Can you tell me how you think the patient perceives your role in CT?

I think that they think we're nurses, they always do, but that is partly our own fault because we don't introduce ourselves as radiographers. Perhaps maybe we should be thinking about doing that now really. Ehm it depends upon whom you are working with, I find that some people are really nice with the patient, really take care of them and really explain as much as they can and so they think of them as nurses then because you are looking after me you are being nice to me, you are a nurse sort of thing. Ehm if you're not I think they think we are there to take pictures as operators of this fantastic piece of machine which they don't understand and they don't know why we are asking them to hold their breath and do strange things like giving them injections of contrast.

20. Perceptions of the radiographers

I. So do you have more than one role C.T as far as the patient is concerned?

I think so yeh, because it's difficult to know what they think really isn't it, how they perceive us, but we take it in turns. One of us will set up the scan and deal with all the equipment and the other one deals with the patient and sets up the injection, so we split the duties. One of you is patient care, injection side of it, explaining the procedure and the other one is actually setting up the scans and taking the scans.

I. And that works well?

Yeah, we just take it in turns, one each.

I. There is a physical barrier between you and the patient with the window from the console room, is that ever a problem?

Sometimes, sometimes they don't like being left in the room on their own, but then we don't like to have anyone else in the room because of the radiation. It is different in M.R because quite often I stay in with the patients in M.R, It's a case of having to sometimes they just need somebody there with them it's not so frightening if there is somebody there.

I. Do many patients tell you about the scan when you are with them?

Well they do before the scan, they can't during the scan or they would move, so I don't encourage them to talk while it is being done. I do in between the scans check up on them so make sure that they are alright but I just find that that actual physical contact. you know if you are there with them holding their hand or stroking their head or cheek or something or even their leg if their head is in the scanner. I often stroke their leg or foot or whatever and they then know that someone is there with them and they will tolerate it then. Whereas sometimes I think that they just would not go in. It's just the fact that there is someone in the room with them, I must be frightening really when you think about it. I mean we put them in this room, strange to them, alright we know it inside out, they don't, and then you shut the door on them and all they can see, if they can see you at all, is you behind this

32.0 Barriers to communication

glass panel operating this machinery.

32.0 Barriers to communication

I. Do you think that the whole process is impersonal in anyway then?

It is really, yes it is, I would say more so in M.R because we are not giving them breathing instructions we are not actually communicating with them much during the M.R examination at all. You shut them in a room, they are in a tunnel in effect, and it's noisy and we tend not to communicate with them too much because we have found that if we do it either makes them either talk back to us or panic sometimes. We have found that they are actually better if we don't actually speak to them.

I. Really?

A classic example, this isn't in M.R, in C.T the other week we were asking this gentleman to hold his breath, hold it breath, hold it breath. When we got down to the pelvis we took the voice off so we didn't ask him to hold his breath but we carried on scanning and we forgot to explain this to the patient and because the talking suddenly stopped he panicked and he was moving and he was shouting into the machine 'what I am supposed to be... I am holding my breath, do you want me to..are you still scanning' and consequently he moved and ruined the scan, I mean it was partly our fault. We lost communication and the patient panicked.

32.0 Barriers to communication

I. Interesting, so are you saying that the communication can be a problem in these areas?

Mmm, yes, but in M.R some people seem to be under the impression that you should speak to your patient to keep reassuring, 'We have one more scan to take it will be about five minutes' and yet we have others in M.R who suggest that if you speak to the patient they start moving or they panic more and then want you to go into the room with them and see them. They do make a barrier really, it's a bit (concerned expression).

I. So how many times would they speak to them in a typical M.R scan?

Not at all, put them in, don't speak to them, no. Different people have got different attitudes about this, some of them will and some say they are better off not speaking to the patients at all. I have stayed in with a lot of patients in M.R because I think they are just frightened, I think that if you can get them through the first scan without actually touching them you may be able to get out of the room because it does give you a headache and it's not very comfortable leaning half way in the tunnel stroking the leg or whatever. Sometimes we have stay for the whole thing and get what scans we can.

30.0 Role models

I. If you were to describe your occupation as a C.T/M.R radiographer to a member of the public, what would you say to them?

Ehm.. I'd say that I'm a radiographer to start with and that we use ... (laughs) x-rays and computers to produce really good cross sectional images of them in one respect and then use a big magnet and a lot of computers to produce an image in another respect. It's really difficult, I have never really thought about that (laughs). You never ever consider that ... you don't.

18.Symbolic Significance

I. I have shown patients pictures of C.T and M.R scanners when I have interviewed them. I ask for the first thought and what the picture symbolises or means to them. From your own experience what do you think they have said?

Well they think the C.T scan is a cancer scan to start with.

I. Why is that do you think?

Because very often we are diagnosing cancers aren't we and the

18.Symbolic Significance

patients' aren't daft and they know there is something seriously wrong with them and they know they we can be looking for a malignancy more often than not. Unless of course the consultant has explained to them that it is something totally different, they know that something is not quite right and we are going to find out what it is, so that frightens them.

The M.R scan I don't know so much because we do a lot of footballer's knees and ankles and things that are often work related injuries really and even private patients that may have had a bad back for years, so they know we are doing it for muscular things so. I mean I know we do do it for cancers and we do have some real poorly patients in, but usually they are so poorly that they are just thankful to get in it really, to get it done , to get it diagnosed.

18.Symbolic Significance

I. Have you come across expressions that patients use in terms of what it is?

For the M.R scanner people have said that it is like a coffin and they have said it is like being down a man hole that sort of thing. Now I have had patients that could not tolerate it, that have been men who actually worked in man holes and in confined spaces and they have tolerated that all their life and yet when they come to have an M.R scan they couldn't do it. This one particular man was so worked up and frightened, we gave him a cup of tea and he couldn't hand the cup in his hand, he was shaking that much. The helper had to hold his tea for him while he drank it. He couldn't believe it himself he said, 'I can't believe that I am so frightened, but I think more than anything that he knew he had something wrong with him and he knew that we would find out what it was. I think also it's the unknown isn't it, he knew than when he went in a man hole that nothing horrible was going to happen to him, he wasn't trapped, he felt as though he could get out, whereas we were putting him in like a conveyor belt that actually dragged him into this tunnel and he felt that he couldn't get out it. He wasn't in control. In the man hole he could crawl out again whereas we were lying him down on the table, I cannot remember what we were doing but if we use the head box it in effect fasteners the head down, I know it doesn't actually touch the head but you feel that and your head is enclosed and you can't get out even if you wanted. Also with the neck attachment it is then impossible to get out even if they wanted to, so that is very frightening.

21. Moulding Preconceptions

I. Patients come along with beliefs and knowledge about the procedure, where do you think that comes from?

Some of it comes off the television, I think, they have horrific stories on the television but most of it from other people, people that have had bad experiences in hospital.

22.Stories

I. Do you think it is powerful?

I think it is yes. We have had some absolutely terrified patients, some really, really frightened because they had been told horror stories of people sticking needles in them, they were in agony couldn't move for 3 hours, sent me into this dark tunnel, tie you down and all sorts of things.

22.Stories

I. Can you tell me about any particular story that you remember?

Only the fact that it never ceases to amaze me that grown men, I've even had men that work down caves, I've had a man that had been trapped in a cave and he didn't panic then and he got out and it hadn't bothered him since he still went down caves but he wouldn't tolerate the M.R scan. He went in panicked and had to come out. I think it is this control thing, it's the unknown and because they are not in control, they know they have got to have it done or they know they should have it done for their own good, but they really feel that they cannot tolerate it because they are not in control.

22.Stories

Especially you know if we just stop and think about what we are doing, because we shut that door and walk out, just because we know that they are not going to come to any harm doesn't mean they do. We know, we know nothing harmful is going to happen but they don't.

I. You have cited males as being the problem patients for most of the stories that you have given me, do you think that is a true reflection, do you think males are a bigger problem than females?

No not necessarily I think that I have had as many females that won't go in it, but the difference is that they will say as soon as they walk through the door, 'I am claustrophobic and I am frightened of this and I don't think that I will be able to go in there', so we try and coax them around by letting them have a look at the machine and explain what everything is and we gradually coax them onto the table and send them into the tunnel and see how they get on. The women seem to be a lot more determined to try but it seems to be the bigger women that claim to be claustrophobic, because they are a lot closer and must feel a lot more enclosed. If a smaller woman is in it the gantry isn't as close to them when they are lying down.

33.0 Gender Compliance

I. Why is this an issue with the men, what is it about the men?

I think they feel more trapped, they feel more claustrophobic because they are usually bigger, physically bigger, and when they open their eyes they are very close to the gantry. In fact I had a patient the other day would couldn't get in.

I. Really, does that happen often?

Only once happened to me and I didn't actually realise how big he was, I got him on the table and he said he was a little bit scared and he was sweating a bit. I said, 'It's alright, don't worry we will take you in, we are not going to do anything nasty to you, I will take you in and then bring you straight back out again'. So I started driving him in, he was going in head first so his shoulders went in fine but when I got to his actual abdomen with his arms at the side his arms were crushing against the side of the gantry and he panicked. I stopped the table but there is a short delay before you come out again, it's not immediate you stop it press the button to come out and wait, and he was panicking, 'I'm stuck, I'm trapped' he shouted and I'm shouting back, 'don't panic, don't panic'. But that was partly my fault for not anticipating how big he was, I think that if I had looked properly at how big he was perhaps, because he couldn't tolerate it then after that. We tried a few more times but I think that I had totally frightened him by that stage.

22.Stories

I. Is there any evidence as far as you are concerned that men have this macho image to live up to and will try not to express their fear?

I think some times, yes you are right, most them are so panicky that when you are driving them in you can see it, but they don't tend to say anything to you beforehand, yeah yeah.

I mean the first you know of it is when they are all lined up and they say, 'Oh, oh I can't do it, oh god bring me out', you know. The women on the other hand will say right at the start, 'I am claustrophobic I know I am frightened'. We have had men cry because they have been so annoyed with themselves that they couldn't tolerate the scan. The man that had been down the man-holes I mentioned before, he went home crying actually, so was so upset and said, 'I couldn't believe that I couldn't do this, I have never been so frightened in all my life'

33.0 Gender Compliance

We were as nice to him as we could possibly be but you cannot force someone not to be frightened can you? All you can do is explain as best you can, I offered to stay with him, hold his hand, stroke his head or whatever you know, he wouldn't. He said, 'I cannot just

33.0 Gender Compliance

22.Stories

33.0 Gender Compliance

23. Self

19. Isolation

22.Stories

stay in there. You don't want to embarrass them too much because they usually have a wife outside who might say, 'Oh you daft thing, I told you you wouldn't do it and it's only a machine and what are you frightened about'. So you don't want to push it too far and say, 'why are you so frightened, tell me', they just want to get out of the room, they are sweating and frightened they just want to get out and out of everyone's way so nobody knows have frightened they have been really because they are men. Plus for us, it's a bit strange because we don't want our patients going out, shaking, crying, sweating, when the next patient is sat outside waiting to come in, so sometimes we try to make a bit of a joke of by telling them no to worry and that we do have people who will not tolerate this and that we can do something else instead by notifying the consultants and not to worry. I mean the man who would not fit in, I told him not to worry, but then there was a young girl waiting to come in so I said, 'Don't let her see you all upset you will frighten her to death' and made a joke of it you know. He did end laughing about it in the end but it is difficult to know exactly how to handle those patients.

I Roughly how often does this type of thing happen?

The first time I was in M.R we had 3 patients who not tolerate it in one day, I don't know why it was just one if those days. We got all the claustrophobic patients together.

I. Do you give the patients the opportunity to look around beforehand?

Yes

I. Do many take that offer up?

Yes they do, males, females and especially children. A lot of people also take their sedatives as well before they come to calm them down. May be we should tell these patients that they will not be left alone in the room on their own, we haven't tried that. I mean we haven't got the staff for one to do it and it does give you a headache. If you are in that room all day, even with the earphones on, it really does give you a headache and nobody wants to do it, I know that sounds awful (laughs) but we can be in there all day. Although we do encourage relative to go in if they want to provided that they fill out the declaration form.

I. Final question, you have had scans yourself?

Well actually I've never been on the C.T scanner but then its never really bothered me. I thought I should go on the M.R scanner because so many people have been frightened of it. I've never seen so many people be frightened of the C.T scanner so I have never felt the need to go on it. In fact just the other month I thought, I never been on the M.R, how can I explain to these patients what it is like to go in it, so I thought maybe I should go in it, because sometimes I feel a little claustrophobic in enclosed spaces so I thought, what will I feel like. Surprisingly it didn't bother me, I thought it would, I made sure they put the head box on me to see what it felt like. It really must feel like you are going into a coffin, it must with the gantry in your face, we have all seen that on the telly where that man was buried alive and couldn't get out. It didn't bother me because I knew I could get out but for the patients well...

I. Did that thought cross your mind, being buried alive?

Oh yes but before and that is why I need to go in it, I thought if I'm frightened of it and I know the machine and I put people in it, what are people going to feel that don't understand it. I can certainly relate to patients' fears but my own experience was fine it was airy, spacious and bright and it didn't bother too much but I am only little.

I. Other M.R radiographer s have told me that the experience was fine but it was just the initial bit going into the scanner that was a problem.

Yes, it's just when that thing comes above you.

14.analogies

I. Can you tell me about that?

It's like being put in one of those long things in the mortuary, you know those drawers, that is what it struck me as. You are on a motorised table that brings you in, you are not crawling in, you are not sliding in it is done for you. No control you suddenly go from a big bright spacious room into a dark tunnel, the end- it's all over.

14.analogies

I. Do you have any local terms in the unit that radiographers use exclusively amongst themselves?

Ehm I cannot think, perhaps if I went home and thought about it maybe we do and I am so used or not aware of them.

I. When you are explaining to the patients do you use the terms polo mint and tunnel.

Yes

14.analogies

I. Pack of polo's?

Oh no don't know that one. When I am explaining about the M.R sequences and they say they have had a C.T scan before I say this one is just a bigger tunnel than the C.T, I mean you have to tell them or they will walk in the room and go 'Oh my god I'm going in that'? So you need to tell them, I mean I had a lady who just said, 'I can't go in there simple'. She wouldn't even try going on the table walked straight out and never came back.

20. Perceptions of the radiographers

I. Very interesting, thank you very much indeed.

We are so busy doing our own thing we don't consider the patient as much as we should. You totally stumped me when you asked me to identify myself as a radiographer. We just don't know what the patients' think. I tell people that I scan people but what that means to them I don't know. They only think doctors and nurses and no other roles exist. I think if they did understand a bit more about the roles of people, I think ignorance is frightening sometimes. We can explain everything in simple terms even the need for contrast injections and things.

15.Communication

I. Do you still get the blue dye for contrast?

Oh yeah it's from years ago but they still think it is coloured. Patients want to know more and more and I feel awful that I cannot tell them but we are trying to get them through faster and faster to get the waiting lists down and the poor patients do suffer.

Thank you very much

RAD7

TAPE

I. Could you please outline your career to date for me?

Okay, I qualified in 1993 ehm worked as a senior 2 in private practice for 6 months and ehm, then I was a basic grade and then a year after that I came here and took up a full time position. 2 years after that, I did my C.T qualifications and got a senior two, and two years following that I got a senior one which takes me to where I am now.

28.0 Career development □

I. That's fine, can you tell me then why you chose to come into M.R, what were your reasons for that?

Ehm could I just say I didn't choose (laugh) you know M.R it's C.T that I wanted to do. Would I be better off asking the questions from a C.T point of view?

I. Well no, let's carry on and I'll ask you about C.T anyway

Okay then.

I. So it was C.T that you wanted to go into then, why was that?

Well, I knew from day one even training and going through the different specialities that I did not want to do ultrasound or gamma camera, mammography- no way (laughs) ehm you know cross sectional anatomy in college I was always good at it, I just enjoyed it. I mean I knew I wanted to do C.T and it goes hand in hand with M.R anyway so the opportunity here to rotate through was good.

28.0 Career development □

I. Did the technology aspects of these modalities interest you at all?

Ehm... I don't think of it in that way it was just a move down a particular line. For me I would say that ultrasound was more high tech you know the physics of it and blah, blah, blah. But no I don't even think about it being that kind of (technically) orientated.

29.0 modality choice □

I. Do you think that other people do, radiographers that are attracted to it from a technological basis?

Yeh, I suppose the basic front of it yeh, you know you have a computer and you have a mouse, so it's just like working on the computer. Ehm the positioning of the patient is relatively simple because it is all done by laser lines, so yes, I could well imagine it that people go into for that.

I. During your career as a radiographer have you identified any role models to whom you looked up to? You know without mentioning names people that have inspired you in your career.

Yeh, I when I came she was kind of running C.T as a senior one and she was in there full time and when I did my course she was my mentor. Ehm but she just had the knowledge and the majority of the time you didn't even need a radiologist, she just had it and it was just wonderful to see really.

30.0 Role models □

I. So what particular qualities do you think a role model in C.T requires then?

I think that she is very good with people whether it be a patient, doctor, member of staff. She is fair straight

30.0 Role models

down the middle and treats everybody the same. I think that she is a very good communicator with people.

I. Do you think that technological development has enabled the radiographer's status.

Well I think that it would go down that way anyway, you know role development and things. C.T and M.R I think that the biggest thing we do there is give injections and put venflons in, so basically you don't need the radiologist. They are then freed up to do their reporting and more interventional work and the for majority of things we don't need a radiologist now. You know with all the protocols and things like that, we just get there get on with it and just do it. I think that role development has paid a lot and I think that what they are doing now is to, well some hospitals already do it, train some radiographers and some nurses to do some day case angio's. It's like well qualified doctors have been doing that previously and they are just passing it on kind of thing. A think this is great for a radiographer, the rewards that you can get from it.. but it's the recognition, I mean at the end of the day you are a radiographer, should you be doing these things? I think that it's a major question.

31.0 technological Influence on the profession

I. Do you think that the fact that you are sat behind your big computer screen with high technology equipment has helped to increase the status of the radiographer or not?

Ehm... yeh because I think with the way that everything is advancing it's obviously going to be going down that line anyway, it's all computers, it's all internet and if you are there at the forefront of new technology then.. you know our role that we play in it is highlighted and we just go along with it ..that kind of thing.

You could say 20 years ago, you know, we were still stood behind a big computer with big knobs, twiddling the knobs as we used to do and I think that that is just as important as it is now, but it's the advancement of technology and that kind of thing taking over, and we are left to do it, and this is what we choose to do really; and it's great (laughs).

32.0 technological Influence on the profession

I. Has any of this technological advancement been to the detriment of radiographers?

Ehm... No I don't .. I think that it's all personal isn't it ? How you are as a person, you know if ..hmm it's difficult. I don't think sitting behind a computer screen and the advancement of technology.. I don't think it takes away your role with the patient. I think the time spent with the patient should be, you know 100%, whether you are in a high tech workplace or not, or you know your basic grade radiographer, who sees them for 5 minutes doing a wrist. Your time with the patient is how you personally deal with them, so if you haven't got it then you haven't got it, but if you have, you have anyway whether it's high tech or not.

15.Communication

I. By 'it' you mean communication skills?

Yeh, communication skills some people are good with them some people aren't. Whether you take the time to speak to the patient or not makes the world of difference to them.

I. Okay, lets move onto the patient aspect of things, how

20. Perceptions of the radiographers
18. Symbolic Significance

22. Stories

17. Coping Strategies

20. Perceptions of the radiographers

32.0 Barriers to communication

do you think the patient perceives your role in M.R?
 I think the majority of them ..they don't realise what we do, you know I mean I am always regarded as a nurse to the patients that come down here, you know the elderly,..I am a nurse. They don't see what I do is any different from a ward nurse ehm..Yeah I think then you when they are sitting on the chairs outside and they see me at the control panel, you know I think that they get the impression 'oh what are they doing kind of thing, is she just messing around' but the majority of old people they haven't got a clue about computers anyway and it's all very foreign to them. I mean they just get into the magnet and the majority of them do find themselves claustrophobic, almost at the first sight of this 'huge machine' and the fact that they have to go in it. I mean they have no idea of technology and what is available to them I had a lady yesterday and it was her first time in hospital having an M.R scan, she was positively frightened of it, and it was just like ..she kept asking questions all the time and you really had to scan this lady because obviously you have people after; you're trying to get her in there and she just wants to talk constantly. It's like you have to try and juggle it to get her, you know to be happy about it and get the examination done in the time that you have.

I. How do you manage that?

I think the more you talk to them the more you.. you know put their fears at rest, you know walk around the scanner with them and kind of ..I mean, I say to a lot of them if they are really scared and have had a go at the scan and they are just not happy, you know they feel claustrophobic and hot. The general feeling that they get then we might sit them down and say " This is not... you know you don't have to do this examination there are other ..things that we can do to get the results but this happens to be the best". Generally they know that and they do want it, it's just the fear of the unknown. I think talking to them is the main thing.

I. Do you feel adequately trained and prepared to do that?

Yeh

I. There is a barrier between you and the patient both in C.T and M.R is that ever a problem?

(long pause) ehm...not from a radiographers point of view, but I think from the patients point of view obviously they are in hospital having an examination done for something that they don't know yet. I think one thing that they are scared about is the results of the actual examination that they are having, I think it is better for the patient if they have someone there with them. It's the fact that you are taken into M.R and C.T and strapped into these machines, basically so they can't move, and they are told that they must not move or it will ruin your scan kind of thing and then they are left; so from a patient's point of view I think that it can be very daunting. You know you have communication systems but it is, you know, microphone systems, so it's all very strange for them and I think it can.. you know their anxiety levels increase and eh I think it must be very hard for them. I certainly wouldn't like it as a patient.

I. If you were to describe your occupation as an M.R

30.0 Role models

radiographer to a member of the public what would you say?

I think I would say that I position patients on a table in a magnet and I obtain cross sectional images of the area under investigation.

I. Do you think the situation in the M.R scanner is in anyway impersonal for the patient?

Yeh, I do (positive expression)

I. In what way, can you explain?

Ehm because basically they are left on their own in the scanner, I think in that sense it depends on who actually put them on the scan and how well they coped. You know, if you just say, "right lie on the table your there let's just do it", then you leave them half an hour, and then you go back in, I think that would be quiet ..(shocked disapproving expression) and daunting for them. On the other hand if you had a good communicator who talks to them, who explains everything and every little detail, and during the scan asks if they are okay..I think that works out better for the patient. In the M.R scan they are given a little buzzer, ehm, I think that helps knowing that if they have any problems then they can stop the scan and we will come into them. I think that fact, you know, puts them a little bit at ease. I think the playing of music does as well, you know you either get people who completely do not like it or they love it and are happy to be left listening to the relaxing music; maybe in the outside world they don't get that chance for some peace, and some of them actually quite like it.

32.0 Barriers to communication

I. You referred to the scanner before as a huge big machine, I have been showing patients photographs of the scanner and asking them for the first word that comes into their head. From your own experience have you an idea of the sort of things the patients would say?

A lot of patients if you say it's a body scanner like ..they tend to think the M.R machine is the same as the C.T and they are surprised because they have a look it's this tunnel thing. I mean I've been on it and it's quite frightening it is very claustrophobic, I can honestly say.

18.Symbolic Significance

I. Can you tell me about your experience in the M.R scanner?

Ehm ..well I got on it just to know what it was like for the patient, so they strapped me into this frame thing with the tube on the top and you felt okay when you could see out and everyone was talking to you but then they press the button that sends you into the middle of the scanner you just suddenly get...and it's the top of the tube and you are going in and it's the long run of this tube and it is very very enclosing, really. That was with me just asking to go in to see what it is like for the patient and not having the fear of what's wrong with me or about being old or not used to it.

24. Orientation

19. Isolation

I. Patients come along for the scan and they have beliefs and knowledge about what they think is going to happen. What factors do you think influence their beliefs and knowledge before they come?

People ehm.. you know a lot of these people they go shopping and they start talking to other people 'oh I'm going for an M.R scan' and the other person says 'oh I've

22.Stories

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22.Stories

17.Coping Strategies

17.Coping Strategies

18.Symbolic Significance

23. Self

had one of those and it was horrendous' and they are frightened before they even get to us. They work themselves up something rotten for weeks and weeks and a lot of them at the end say, ' it was nothing, it was really nothing so and so told me it was going to be horrendous and I was going to be strapped up and dangled upside down,' and you think what we can do.. I mean a lot of people have these leaflets, but just don't read them anyway, and it's just explained to the patient before they get into the scanner. I have to say in M.R especially, they do say to them that you can always come around for a visit, you know if people are claustrophobic, you know see what you think and if they know that they will not be able to do it they just go to their G.P and get some valium, it usually works.

I. Do people take up the offer to visit often?
Yeh they do actually I was quite surprised. You get some people phoning in saying well can you just describe it for me, I really don't think.....so I say 'well just come along' and well a lot of them do. We had a woman yesterday who ehm knew that she would not be able to do it so her daughter told her to go to her G.P get some valium but she was determined and came along anyway. She came and she couldn't do it, then she was going to go away and have some valium and everything but we persuaded her to have one more go; you can put this apparatus on top of your head with a mirror you actually look in the mirror but it focuses your eyes outside, and she lasted for the whole scan and she was quite happy. So there are certain things that can you know trick the brain into thinking that it is ok.

I. So when these people phone up for a description, what are they asking you to describe the experience or the machine?
I think they are asking about the experience more than anything because if you start explaining to somebody that it's like a 'tunnel' then they won't come anywhere near. I think if ..they just want someone to talk to really. I just run through what is going to happen and you know the majority that come have a good 'nose' around, lie on the table and maybe go inside it as well.

I. Have you any particular stories that stand out of patients having difficulties with an M.R scan?
We get a lot actually ehm, I don't know if that is everyone or just me (laughs) I don't know what it is but...(laughs) I mean yesterday I had about 5 patients who started off well but couldn't complete, they had to press the buzzer and come out. Quite a few of them tend to be large people and I think it is because the bore of the magnet is quite narrow and they tend to squash on the sides and I think that makes it worse for them, plus the fact that they get a bit heated andwell. I just tell them that they will be alright and do you want to try this or that, different things, all of them managed in the end yesterday which was good.

I. Do you find that you have to put your 'professional hat' on as it were to help them or your normal self, if there is a difference in the way you handle these patients?
I think that you have to be professional with them

23. Self

297 anyway, I mean you are here doing your job, they have to
 298 believe that whoever is doing the scan is confident and
 299 competent to do it; they don't want to be thinking 'does
 300 she quite know what she is doing'. We are professional
 all the time and I think one of the key points is to
 remember not to put them under any pressure to make them
 feel a little more relaxed and yeh that tends to work.

I. Is there one particular story that stands out?

They are all much of a much-ness really, not really, I
 only have a small rotation in here.

I. What about patients' is there any difference between males and females?

Yeah I would say that females are more prone to thinking
 that they are claustrophobic, ehm I think a man would try
 that little bit harder because he is a man (laughs).

I. Why would he do that ?

I don't know pride I think

I. Do you get many men phoning up to look around?

Ehm in my experience it has been women and I think that
 I've only had one man, an elderly man, all the rest have
 been female. Yes it tends to be more the women who phone
 or look around, I hadn't thought of that before.

33.0 Gender Compliance

I. In your experience have males had problems but not said anything to you?

Yeah, I do I think when they actually see the scanner
 they say 'wow or ohh' but that is usually it, they rarely
 say anything else. They just kind of get on with it and
 then at the end they say 'oh I didn't like that at all',
 they never do anything about it they just.. whereas a
 woman would be pressing the buzzer like god knows, you
 know you would be in and out talking to them and getting
 them off the table. I mean I don't know whether that is
 because they are female or just old and want to talk to
 someone.

I. Patients have used terms related to the M.R scan such as 'tunnel', 'coffin' and 'spaceships', are there any other terms that they use that you have come across?

No it's just the tunnel really, with the C.T we get a
 washing machine and a polo mint.

I. You don't get a polo mint for M.R do you?

No I think because with C.T you can see the other side,
 what we try to do with these patients is say, if they are
 having a lumbar spine or anything like that, their head
 is actually quite far out the other end and if you only
 give them one pillow they are looking out the other end
 I think the key to this is trying to do everything so
 that they go in feet first. We had a patient yesterday
 who asked if we could scan the other way round since they
 had to go all the way through the tunnel head- first. We
 said not really, but we could do, he said that it would
 have better if my feet could have gone in first.

24. Orientation

I don't know if it's the feeling that when they are
 travelling through the tunnel because it seems to go for
 a long time, and then they just stop whether they are at
 the end or in the middle, but if we turned them around it
 would be their feet entering the tunnel going in first.

24. Orientation □

It depends where their coils are and what we have to do.

14.analogies □

I. I think that it is obvious why people refer to M.R as a tunnel, but why do they call C.T. a polo mint? Because it looks like one' it's narrow and has a hole in the middle and the washing machine it has that front face on it with the circle in the middle, I haven't heard them say anything else about them.

I. Thank-you, those terms come up on a regular basis, thanks for your valuable time.

**Rad8
interview
tape no.**

I Ok, just so as I can get some background, can you briefly give me an outline of your career to date please.

OK, I qualified in 1985 and for next two and a half years I did general radiography and nuclear medicine in the UK and then I went abroad for four a half years where I did general radiography, mammography and ultrasound. I came back to the UK and worked for just over a year doing agency work in the private sector where I learned MRI on a 0.5 magnet then for 10 months I worked on a 1.5 magnet in the NHS then I worked for six and a half years in the another hospital where I was superintendent in charge. For the last 15 months I've been working on an open scanner here.

28.0 Career development

I. Ok, so why MR? Why did you choose to go into MR

I did ultrasound previously and really enjoyed that, but I couldn't get an ultrasound job when I came back to the UK. Prior to that when I was abroad I wanted to do MRI as well because I like images, I like doing nice pictures and because it was new at that time, there were very few MRI scanners in the world anywhere. I thought it would be good to get into because technology moves very very quickly, but the detail, compared to what we were seeing on CT and ultrasound. You could see that MRI would surpass all that very very quickly, it was so exciting and I was just so stunned by of how interesting it was and I could see the spinal cord rather than have a myelogram and it was so interesting. I could see that it had a long way to go and that it would be very interesting. I just thought wow!

29.0 modality choice

I So the technological aspects attracted you as well?

Yes, I'm not a computer boffin at all, that's just a way of getting images but the development would be very quick and very interesting and the things that we would be able to do would be like 'wow'.

I OK, cutting edge really of development

Yes, that was years ago now, that was 1990 I was thinking about it - , I went down to a different part of the country to see the first one, I was being noseey really, and I thought that was absolutely amazing. When you look at them now...look at their growth they looked gross, but at that stage, you know they were fantastic.

29.0 modality choice

I Do you still feel the same way about it?

Um., yes our images are getting better, they do get better, we can do slightly different things or we can make them faster, so there's still a long way to go, there's still a huge amount of development going on, but I have to say, the job I'm doing now, I'm not at the cutting edge of development, open scanners tend to be

29.0 modality choice

29.0 modality choice

behind the tunnels, also with that the reason why I left the NHS, a lot of issues really, overworked and underpaid you know, but it is a bit like a treadmill, you're just pushing patients through, you don't give them time, also I enjoy being with patients, and that's why I chose radiography full stop anyway, because of the technical aspects, but also because of dealing with patients. Going to the open side of scanning, you deal with patients more, because generally the patients you get are going to be the more difficult patients. Its hard dealing with that every day so its really nice when you get a patient who is not claustrophobic and just lies there and you think great, fantastic, but when you do have to spend time on it it is a challenge, sometimes the pictures are fantastic, they're not the best that you would like them to be, however given the state of the patient, they are diagnostic the patient can only tolerate so much, I like to get a result with the patient being able to tolerate as much as possible without bursting into tears or walking out of the room which does happen. In tunnels.

I OK, during your career have you been able to identify role models, I don't need a name or anything, but is there any particular person that had qualities and that you aspired to shall we say?

30.0 Role models

Not really actually, I mean there's been the odd radiographer that I've seen and I've liked their work they do things really well, not many actually, while I was training there was a girl, and everything she did, you know, was just right, she positioned patients correctly and everything, whereas there are a lot of others you know who don't care what they're doing, As I say there is the odd one who is so good, the way she deals with patients, whose pictures are so nice and who takes pride in her work, but there's not many, they're few and far between really. I just look at them and think 'wow'. There was a girl who I worked with in my first job, I mean she's a friend of mine now and she gets brilliant pictures, she's a really good technical radiographer, she gets excellent pictures even with difficult patients, she does it so quickly as well, she used to be so efficient and she would get the result while other people were just standing there, not knowing what they were doing really. She would just get the result and I admire that because its very hard to get good quality pictures with difficult patients. I'm talking about drunks now, in the middle of the night, when people are unco-operative and she would always get a result.

I In your opinion then has technological development through the years enhanced the status of radiographers?

31.0 technological influence on the profession

I don't know, probably not. In some ways technology makes life easier and people do things almost pro rata, what's the word, they don't think about what they're doing any more, like for instance a CT scan, CT of chest and abdo - most radiographers just say 'oh just put them in and do tens on tens all the way through chest abdo and spiral, whatever, top to bottom, finish, get them off. That is what they say, and when you ask them what are the pictures like they sayd 'Oh, I don't know, I didn't look at them'. Maybe that's a fault of pressure, too many patients, its back to the same thing really, not looking

31.9 technological Influence on the profession □

at the quality of pictures, not looking at any kind of you know pathology generally, because you haven't got the time. When I was a student you had to evaluate your films and go through them, what was right about them, what was wrong about them, everything had to be perfect, as you go through your career, that period of time when your film is up on the viewer, the quality issue gets less and less and less. After a while, you know its there, because your brain recognises the pattern because you've seen so many before, but in some ways, there's pride in that - having nice pictures, you know when I was doing ENT, skull work, in my first job I was doing that and I loved it. Good x-raying TMJs mastoids and all the rest of it - these beautiful little pictures coned down, my favourite part of the job was in the skull room doing all these x-rays and doing them well and doing them very quickly, you know, it was pride.

I Did you prefer that than doing an MR scan now on say a brain?

31.9 technological Influence on the profession □

Its different, then it was, well it was just you and the patient, you were holding their head, positioning them and taking these nice pictures, it did take skill to do that. This is a different kind of skill, actually sometimes its not a skill at all, just wack the patient in, hope they keep still, run the sequence and then out. Fine, finished. Other people think about the patient, do the sequence and then think 'Oh, that doesn't look quite right, or what shall I do about this' maybe do an extra sequence and look at the pictures as you go along not just say 'Oh, that looks fine, great' and go on to the next, but actually evaluating what they see so there is a skill involved in getting nice pictures, and also evaluating what you do next. I don't know, it's a different kind of skill, the positioning isn't always very accurate as regards the patient because we can adapt, because we can angle them any which way, but the skill is getting the patient comfortable and knowing what to expect and then us maybe changing our protocol as we go along if we have to. However, it's a different kind of skill., that is often overlooked.

I Right, again in your own personal opinion do you think that this technological development has been to the detriment of any radiographers?

31.9 technological Influence on the profession □

Yes, CT seems to be the worst, I don't know why, maybe because there's no Doctor watching what's happening, just a routine whatever, its basically lie them down, strap them down, whiz them through, out the other end - excellent, fine - do a run, give contrast and then off the table, and its interesting because sometime, patients have two or three tests, they're having ultrasound, CT and MRI, and you ring up and say 'Mrs Jones, who you did this morning, did it show anything' probably because they haven't got time, fantastic images come out, the doctors have got the reports obviously, but the radiographers, they just by pass them completely, they're just the first and last and one in the middle to check the patient was there and they haven't actually evaluated anything, and that's really sad, because with imaging, you can do batch imaging now, you press a button and the processor talks to the machine - the scanner and every image, you don't have to worry about windowing because in CT you set window levels, you don't even have to worry about that.

31.0 technological influence on the profession

generally in MRI you have to window things yourself because each patient is different, you can't use set window levels, I mean we try to make them as pretty as possible if there's an artefact involved, we have to look at the images, but in CT they don't. I find it amazing, that probably is the worst modality. Ultrasound obviously you have to concentrate because you're actually doing the scan yourself, I haven't done Nuclear Medicine it for years, but obviously you have to check for cancercounts, need to see the correct hot spot, or if the bladder is not showing up too quickly and all the rest of it you know. That is slightly different, but I think probably CT is the worst modality for detrimental behaviour or whatever.

I You think its because radiographers can sit in another room ?

Yes, that's right, sometimes you go in and there'll be like a party almost, radiographers and doctors and the poor patient is left alone, and sometimes nobody talks to the patient, he gets left in there, you do this with an MRI scanner as well, but I try to tell the staff I work in to imaging it was thenm, and its really isolating being in a tunnel, its worse than CT because even if you look at the wall, its so close you can't focus, you can't even look at anything, the noise is disorientating and you have no idea how long you are in there, you could be 5 minutes of 20 minutes - most people don't have a clue.

23. Self
31.0 technological influence on the profession

I Do you think that that's true with everybody, do you think that everybody loses their sense of time?

Yes, even staff members especially the ones who go in head first when you're doing the head, the neck or upper spine, they thank you so much for talking to them during the scan, they have no idea what's happening out there, I try to talk to them in between each sequence just to say I'm just checking the pictures, but basically we haven't got up and left them, we are actually checking the pictures. Most people do appreciate that.

23. Self

I So, how do you think then that most people see your role, who do they think you are?

Some think I am a Doctor, because I haven't got this nursy uniform. In the NHS it's the girls are the nurses and the men are the doctors generally. We're all doing the same job, the men they don't expect anything because you're a nurse. Here, because I haven't got a white uniform on they don't know what I am, my title is Practice Manager so they're not quite sure, a lot think I am a Doctor because there's nobody else here. There's 2 other staff and me, I guess the assumption is that I must be the Doctor but I do say that I'm not the Doctor, I perform the task and yes I do look at the images but no I'm not allowed to diagnose because that's not my job, it's the Doctor who looks at the images etc. They laugh because of this issue that I'm not a doctor, I tell them I'm not completely stupid that I do know what I'm looking at. They said 'If you're not a Doctor how do I know that it will be alright when you don't check the pictures.' I tell them I do check the pictures but I don't report on the pictures because its not my job. I tell them that the quality of the pictures are fine, but

20. Perceptions of the radiographers

20. Perceptions of the radiographers

I can't tell you if there's anything wrong with you.

I They don't put their whole trust in you because you're not a doctor, that's an interesting point isn't it.

20. Perceptions of the radiographers

Most people think that when you go for a test some kind of technician does the test and doctors interpret it. Very rare do you go when the Doctor actually does the job as it were, occasionally they examine you, and when they see a consultant they're not there for half an hour generally are they., usually 5 minutes.

I No

20. Perceptions of the radiographers

They ask a lot of questions like, 'I'm having my neck and back scanned aren't I' and I said no actually its only asking for your lower back, not your neck, and they say 'Oh, but I told them about my neck' and I say 'well they must have examined you'. Only this week actually a patient assumed he was being scanned for more than was asked for. I did ring up and ask the secretary and she said the doctor did examine the patient but sometimes I think the Doctor doesn't tell the patient everything, they tell them 'I'm sending you off for a scan about the scan' and the patient seems to think that its for the whole body, everything, and not just a scan of a particular area. There is a bit of a gap there between the Doctor and the patient, hopefully we fill in the gap, but sometimes a patient is not happy.

..description

I Interesting point though, I've asked other radiographers in CT and MR in different places to define their role, I mean you make a habit of telling the patient exactly what you're going to do.

20. Perceptions of the radiographers

Yes, well this is not a hospital, so they are a bit confused with what exactly happens. There's no Doctor here, so the patient gets told that if they're private they take the films away with them, they are their property and are told them to take them away and take them to the Doctor next time they see him. In the meantime they are told that the images will be reported by a radiologist and the report faxed to their doctor tomorrow, so they are given a slip explicit of instructions and information as what is going to happen. It is not a hospital, but even in the hospital we had to tell them that the results would go back to their consultants, and what used to happen was that most consultants would send for you when they have had the test. These are the things we were told to tell a patient as otherwise you could be waiting a long time for a result. Pointless doing a test if you don't get the result, we do tell them exactly what is happening, what is happening afterwards, who does what and where the results are going to be.

I OK then, so the physical barrier you have there, you sat in one room, screens, and then the patient in the other room, any problems?

32.0 Barriers to communication

Yes, you are not close to them and sometimes they're talking to you, and even with a microphone, they are talking over the volume of the machine, and with all the background noise, and I am slightly hard of hearing, so I am desperately trying to listen. I can vaguely make out

32.0 Barriers to communication

that they are talking, what usually happens is you usually go into the room, even if its scanning, its not really a problem, and talk to them, and ask them what the problem is they might say `Oh, I've forgotten my wedding ring's on` you know, I think they have a panic attack you know. You have to make allowances for that, either go in and talk to them in between each scan, or I tell them to wave to me if they have a problem.

- I Right, so communication is usually via the microphone is it, and can a patient see you through the window from where they are, depends what they're having I suppose.**

Generally not, feet first in all magnets, they are facing away from me, if they're having their head or neck they've got to lie supine, generally we tend to do feet first because their head can stick out this side of the magnet, as far as I know they can't see me, the relatives can see me, but the patients generally can't.

- I Do you think that presents them with a difficulty**

Yes, the last scanner I worked on was built that way because of the space where you were, rather than looking down, it was sideways on, sometimes they're better because if they were going feet first they actually look across to you to see you, but of course you have a clear view, we used to have a camera down the far end, we have another monitor with a camera on to show us what the patient was doing, but I mean its all about design, sometimes there's no choice, this is the way it has to be because of space, but generally it is considered the best looking down so the patients are either feet first and you're looking at their head or their head first and most of that time they can't see you. The only time they can is if they've got a head collar on with a mirror attachment and only certain manufacturers do that, but then that brings up difficulties because they can see you, what you're doing, but if somebody walks in when you're scanning and you're talking to somebody, they think you're having a party. In fact it could be the Doctor but they don't know that, and they do sometimes get `why is somebody there, why are you talking to that person?` They are lying there, they can see you, and they have quite a clear view of the person sitting there scanning and they do get upset if sometimes people come in that they don't know and wonder why are they there. Usually its not for a bad reason at all, sometimes it's a paramedical student whose been brought round on a tour, but all they can see is a mass of people in there. Somebody's just brought them in and says `this is an MRI scanner, jolly good, and off they go - but they don't know that. You can understand, they're having a scan, so why all these people, it does bring up problems.

32.0 Barriers to communication

- I So a non radiographer then, how would you briefly describe your occupation, what do you do? What would you say to them.**

I'd just say, I am a radiographer, they usually work in an x-ray department, however I don't work in an x-ray department and I don't use x-rays, I work in an MRI scanner which is basically a very large magnet and I take very detailed pictures of any part of the body.

30.0 Role models

I So the whole process for the patient, do you think its impersonal?

Most of the time Yes it is, but I try and make it more personally basically because the job here is dealing with a lot of difficult patients a lot of the time. I try to make it as comfortable as possible for them.

I So you were aware of the fact that these patients have had experiences before probably so I would think you are more tuned in to their needs. Now I say to the patient 'I'm going to show you a picture' (this is after they've had the scan, OK) and I say to them 'what is the first reaction you have to this picture, what does it symbolise to you'

What sort of things do you think they might say?

'Oh God, its horrible, I've got to go in there? When they first walk into the room they say, 'Oh my God its not big enough, how am I going to fit in there, has all of me got to go in there? Most people have a big shock, because the machine is big and the aperture small and its long, and it comes home that its going to be a bit of a problem for most people, some are OK, they don't care, but generally yes....

18.Symbolic Significance

I Almost a negative reaction?

Yes and of course there are the ones who say 'yes, I've seen this on TV, but I didn't know it was as small as that though, they are a bit concerned yetah.

I Do you find there's any difference between males and females, I know it's a generalisation to say so but from you experience?

First reaction no, you get claustrophobic men and claustrophobic women, some deal with it and some don't, so generally no. The difference with men is that they are usually bigger, broader and that does create a problem because no matter which part of the body you're doing, generally on a tunnel, unless its their ankle, foot or lower leg, even the knee, getting them in because they've got big shoulders, its going to be a problem, even if they're not that big they're touching the sides. A lot of people don't like that because they're out of control and they're not going to be able to get out, especially rugby players, and we were always told, unfortunately you have to try every patient in the tunnel, we have had people who have failed in the tunnel because of their size, but we always have to try. Its horrible because you know they won't fit in but you have to try. Some are pushed into the side and they can't move, they are actually stuck, and I have scanned people like that and I have always felt so sorry for them because they have no control, they cannot move, they can barely move their fingers because they are so tight in there. If you get a result then great, but I would not say it was a pleasurable experience, it was horrible, like being stuck in a pothole, some people can cope with it but others say 'no way'. Some of those patients who end up here and even the people who are private anyway and have had previous scans, I think 'Oh, brilliant, they won't have to be squeezed into that tunnel again. It

makes live a lot easier, their arms are relaxed and there's no problem

I. Those patients who say to you they didn't have a problem, but clearly they have, do you get that often?

This sounds really horrible but all patients are like this, yesterday the first patient in the morning, he said he said a massive RTA years ago, metal holding his skull together, in hospital for 3 months, can't remember what happened to him and didn't know whether he had neuro surgery and the story was getting bigger and bigger and worse and worse. The bottom line was I did the scanning and he told me there was metal in his head, God know much, so I sent him for an x-ray and the bottom line is he didn't have any metal at all even though had a big dent in the front of his skull and you could see it but patients do say things sometimes, either trying to hide things or make them bigger you know, like 'I had to have a scan you know and there was a really small space and I had to go in and blah.....but that was no problem, and you do know that the last time they came in it was a huge problem. Yesterday I scanned someone who had been in before Christmas and her mother came in with her, she said she hadn't filled in a questionnaire last time, so she did it, and then lo and behold we find the one that she had done the time before, she said 'I didn't do one' well she did. I knew she did, because I did it with her, but people fib and they fib for various reasons, and the thing with patients is how much do you trust them. If they're difficult, and some things you're very dubious about, and safety issues, you just have to check them out because you can't put them into the tunnel or whatever, no I don't trust everything that they say.

I Is there any difference in the sexes male and female?

I don't think there is, there are some people who walk out, and they know they've had a bad time, but they walk out and they said 'it was fine', and some people who say 'that was terrible' but seem to be coping quite well, well they appear to be coping with it, they didn't say they didn't like it or make any gesture that they wanted to come out. Different coping mechanisms isn't it.

I I find that because I stand and watch the scans sometimes, speak to the last one who says its no problem, or its fine or the other way round, when they've had a bad time in there, stop and start and then come out. OK, so what factors influence patients.....

Well, if they know somebody's had a scan before, obviously they will hear about it, one member of the family's had one and that's fine. For instance a knee scan is not a problem, they said 'Oh my son had a knee scan and that's fine', but say it's the mother's head, then they have to go in head first, so it is slightly different, a different part of the body and it does create more different difficulties. Some have had a terrible time and there's been a cuffle trying to get them in etc, and then when they come they say 'what was all the fuss about'. Again a different person, coming in for a different reason, you just never know, but they get information from people they've been talking to, or 'Tomorrow's World'. Seeing a bit of equipment is not the same as having a scan and very different having a scan

and sitting there watching somebody else having a scan - it is different, its far worse, lying there, being out of control, especially if there's something wrong with you.

I Does the patient feel isolated?

Yes, they all do, but you can make it less, most people who come here say its not as bad as they thought, but it's the set up, as you can see its an open scanner, we have deliberately tried to make it better, with windows in the room, curtains to soften it, plants in the room, try and play music, we try to encourage anyone to sit with them, that's no problem, so we try, but we get fedset up with that because we get a lot of people who have failed previously failed in the tunnel.

I You have told me quite a few stories as we go along really, but are there any particular stories that stand out, about patients that have had real problems?

There's so many actually, I seem to spend my life almost cancelling patients and basically just trying to do what it takes, there are different issues, claustrophobia is a phobia and people who come, I don't like heights, I wouldn't say I've got a phobia, but I definitely don't like them, so I would not like to stand on the edge, that would not make me happy, I appreciate it and a lot of relatives done't, they put pressure on saying 'for goodness sake, it looks fine to me, plenty of room in there, ' and they say 'yes, but you're not going in there and you haven't got this phobia' so it is difficult, even one of our Doctors, I worked with her last week and she has got very low tolerance, even though our business is actually scanning, with open scanners doing a lot of difficult patients. She says 'for goodness sake, why don't they just go in' Its because they can't. I had to tell her 'you could never be a radiographer, you could not do my job because you have not got the patience'. We try and do every patient, I have failed on a couple of occasions but that was basically not just the claustrophobia, that was due to physical disabilities- actually getting the patient in a correct position, they couldn't tolerate a lot of pain, but I said 'you could not do that, it's a good job you're not a radiographer, because you don't even think about the patient'. She laughed but it was quite true and said 'why can't they just like there and get in.....well it's not that simple.'

22.Stories □

I That's interesting, let me ask you about claustrophobia thought, is it claustrophobic, is it true claustrophobia, I take your point about the height and things, but are these people true claustrophobics, would they feel enclosed, what is a genuine claustrophobic?

There are two types; we get the true claustrophobics, you can tell them a mile off, they don't go into lifts, never go into small spaces, they like to keep the door open, don't like buses or trains, they can't wait to get out for space; you know then they're true claustrophobics, and there wouldn't be a hope in hell of getting them in the tunnel and even with the open scanner its hard because they just don't like the feeling of being out of control but hopefully we can get over that.

34.0 Claustrophobia □

34.0 Claustrophobia

by someone sitting with them, seeing the doctor, getting valium, playing soft music, we can get over it sometimes but its very hard. The other people are the ones who say they know they`re claustrophobic;but didn`t know they were until they had a scan, but I think that`s a mixture of things, being out of control, feeling tight, enclosed, but have no problem with other things like lifts etc, so there`s a lot of issues, a kind of claustrophobic, but not a true claustrophobic, so I think there`s two types really.

I The true claustrophobics, do they actually give you examples? Of incidents?

Oh yes, `I don`t travel by train, I`ve tried and I can`t; I have to go by car and I have to sit in the front seat`. They will say exactly, there are things that they will not do, they will not go into a lift, `I will climb every stair` there`s nothing you can do.

34.0 Claustrophobia

I Do any of them talk about the initial experience they`ve received that triggered it off - locked in a wardrobe or locked in a room or something.

No, no instances like that, I think its something that they`ve always had. I don`t think anything triggers it, nobody told me that anyway.

I Right, patient terms, patients talk about scanners, the coffin, the tunnel etc - any more?

Well it`s the CT, MRI thing - and it`s the doughnut - that`s the CT, looks like a washing machine, generally the MRI scanner - looks like the crematorium - people have said I`m never going into that machine it looks like the crem and I`ll never come out. I say its only for a short period of time - you will be coming out, some have a laugh, when they come in, they said I`m in the crem,

14.analogies

play some music now and the curtains will come over me. They`re the only ones I can think of it.

Yes, spaceships, rockets buried alive etc, yes quite varied.

I Have you had a scan yourself?

Yes, I`ve had many of them - not diagnostic, nothing wrong with me just to do tests.

I How did you personally find it?

I don`t mind it, generally if you`re lying there for half an hour, you can`t do anything, I wouldn`t say I enjoyed it, I`ve been in the tunnel quite a few times, and I can see exactly why people don`t like it, I`m not that big, my shoulders don`t touch, but I lay there and thought `God, how much longer` even though I know what they`re doing, I know they`re testing it, but it does seem like an awful long time - two and a half minutes, you do feel its longer sometimes. You do come out disorientated - this one isn`t so bad because if I`m having my back or elbow,wrist, I can turn my head and look out the window, it isn`t very pleasant, I can see exactly where they are coming from, I have to say well there`s a reason for it unfortunately and it`s the best test we`ve got.

23. Self

24. Orientation

19. Isolation

I So you find the windows are a big help?

Yes, people say, oh its so nice, you can look at the window, watch the trees move, and it made me feel that I wasn't totally enclosed, let me know that the world is out there you know. There's life out there and the effect is relaxing, you're not so much isolated.

9.other radiology

I The other question is, we've talked about MR and CT exclusively, and that's the area you're in, but do you think there are any similar technological problems with any other ?

Yes, remote controlled digital radiography, when you're doing any kind of specialis, you know venography or arteriography, I don't do it, but I certainly watch procedures, the radiographers setting everything up, the Doctor's there and the poor patient with the automatic injector attached to them you know, they are just stuck in the middle of a room. That is very isolating as well, of course it saves radiation dose on the staff but it does look very bad really, patients there, all gowned up, big machine over them, attached by a connector to a rapid injector, and everybody's like 'take it away.' ten foot away, Poor patient, no-one there holding their hand, that isn't very nice. Every x-ray test when you go behind the screen, they always make a joke of it, but they accept that because its only for a second, its when they're left for a longer time that they feel isolated, stuck on their own. Its hard.

19. Isolation

I That personal touch is there then.

I always touch people, some people don't do that I know but I usually do because it reassures them just as they're going in, that you are there and you are not standoffish and not totally leaving them alone, so I usually tap them on the arm or shoulder as they're going in and say are you OK, and they either say 'yes fine thank you' or 'no, I want to come out now' and they come out and say 'sorry I didn't know it was going to be like that' and then they usually go back in.

I Brilliant and thank you very much indeed for your time.

RADEXP 1

I. Good morning, thanks once again for agreeing to be interviewed. I have already outlined the background to this study for you and I would like to state once again that this information is totally anonymous. Have you any further questions at this stage?

No I don't think so

I. You are a radiographer, could you briefly outline for me your career history to date?

Well I am currently a senior II radiographer, I work in general, CT and MR doing extremity work and I also work in cardiology.

..works in ct/mr

I. Okay so you have previous experience in MR and CT as well did you say?

Yes

..1.2 previous scan

I. So obviously you have a good knowledge and some experience of these modalities beforehand. If I were show you a picture now of an MR scanner, what would it represent or symbolise to you, what is the first word or thought that comes into your mind?

Do you mean as a patient or a radiographer?

I. Well to start off from a patients point of view It's a long tunnel

18.Symbolic Significance

I. Okay, and from a radiographers point of view? Well I have since done some work down in the unit so it doesn't worry as much as it did the first time.

I. Fine, what I'd like you to do now please is to tell me the story of the scans that you have had, to start off can you tell me what you were expecting to happen?

The very first one I had was actually an MR scan, it was a very long time ago, it was one of the earlier ones [scanners] so it was just a huge machine in the middle of the room; the room itself wasn't even decorated. It was at the very early stages of scanning and ehm it was just absolutely terrifying. I mean I had seen CT scanners at work and even worked with CT scanners and I thought that it would be much the same, but it was nothing like (laughs). At that stage our department didn't have an MR.

3.expectations

I actually came off a 21 hour night duty before my MR and I thought, well that should be enough to tire me out and make me sleep because I was told that it was a very long time and at that stage it was almost an hour. It was very early in the development of MR. So the whole thing was absolutely terrifying, I've had MR since and its not been so bad because I knew what to expect.

3.expectations
4.feelings

They gave me a panic button which at that time was quite a new invention apparently but I panicked that much that I couldn't even press it. The only reason the radiographers knew that there was a

2.concerns
23. Self
16.Control

2.concerns
23. Self
16.Control

57. problem was because I started to hyperventilate
58. but I just completely froze.

59. **I. Right**

60. It was a hip problem that they were trying to find out
61. about so I was completely within the scanner, it was
62. dark, it was long and ehm ..the fact that I was so
63. tired didn't seem to help either. I am quite
64. claustrophobic so no, it was awful.

26.Memories

65. **I. Would you have said before the scan that you were claustrophobic?**

66. Yeh, probably I had a horrible big sister who used to
67. lock me in the cupboard at home when I was younger, so
68. I was probably always a little claustrophobic, but the
69. scan was the worst that I have been in my entire life.

26.Memories
14.analogies

70. **I. When you were panicking inside the scanner did that previous experience come to mind?**

71. Yes, now you mention it, it did, it also came to mind
72. that I was in a coffin and I couldn't get out. I can't
73. even sleep in a covered bed I don't like having things
74. above me. Being in the scanner was even worse than
75. being locked in a cupboard it was just like being
76. buried alive.

2.concerns
23. Self
4.feelings
15.Communication

77. **I. Can you think of any other particular thoughts that you had at that time?**

78. I definitely remember thinking that I'm not going to
79. get out of this alive, I really didn't and I froze
80. completely, I couldn't move a muscle. I couldn't press
81. the panic button and I couldn't get help any other way.
82. I wasn't aware that I could have spoken and someone
83. would have heard me but I couldn't have spoken anyway I
84. don't think.

4.feelings
5.information

85. **I. Emm so how much information were you given for the first scan?**

86. Nothing at all, at the stage that I had it done it was
87. an experimental scanner in the neurology suite in
88. Scotland, it was terrifying.

14.analogies

89. **I. If I could ask you about analogies, I mean you have mentioned the coffin which is a very powerful one, but is it similar to anything else that you have experienced in life however strange or bizarre?**

90. No, it was like a lot of nightmares that I've had ehm I
91. would say even in my nightmares that would be one thing
92. that would really scare me to be enclosed and in the
93. dark; powerless.
94. It was like one of my worst nightmares.

19. Isolation
4.feelings
15.Communication

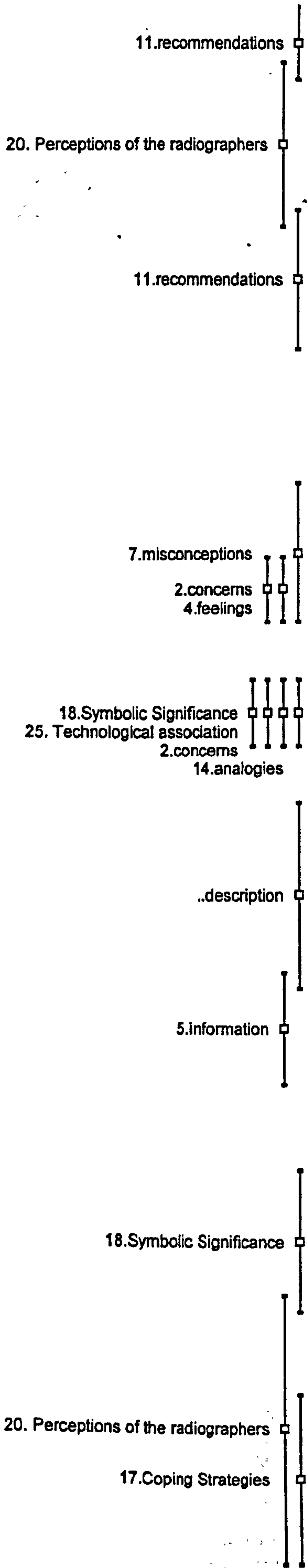
102. **I. Was the fact that the radiographers were in the other room an issue or not?**

103. I think the lack of feeling that you could communicate
104. with them was a problem, I mean I know now with the
105. newer scanners that you can communicate with them by
106. speaking and that does ease your panic I think. Also I
107. know now that if I panicked then I wouldn't be as bad
108. nothing can be as bad as that first time.

11.recommendations

110. **I. Okay, is there anything that you could recommend that might help to improve the experience for patients?**

111. Well most things that I could recommend have actually
112.



been done ehm there is a huge amount of information, the rooms themselves are more spacious and the scanners are not as dark inside. The communication is much better, I mean certainly in our department I would say that the radiographers who work in MR are handpicked and they are all very good at the psychological side of it. I suppose the fact that I have finished a psychology degree since helps me to understand some of the reasons why I went through those emotions. I think that psychology is part of the degree training programme now anyway but it really is one of those things that you learn on the job as much as anything I don't think that it is something that you can sit down and learn from a book.

I. Are you aware of any misconceptions that patients have with regard to CT or MR?

Well I think that an awful lot of people are like what I was at the time and think that MR will be just like CT. They are not aware that it is very different, I ehm perhaps a point that I should have mentioned before was that the MR is extremely noisy and that definitely contributed to my fear. It was like mechanical noisy and that made me feel that I was going to be crushed as though the thing was going to collapse in on me.

I. mm that's interesting

There was a lot of noise, very mechanical sort of thing almost like a washing machine, I felt as if something was going to go wrong and I was going to get crushed.

I. Anything else related to patient?

Not as much now as they used to do because of the leaflets and the information that the doctors give out. I think a lot of the doctors in the early stages didn't know how different it was and they would just say, 'You're just going for a scan' and that was that kind of thing. They often didn't explain properly, but certainly here at the hospital we do and we don't seem to have a problem. Talking to the patients mostly they seem to be quite happy with the information that they got and even for me now, if I was going for a scan I would know better what to expect from a patients point of view because the information is so much better.

I. Are you aware of any particular patient stories or experiences in MR?

We have had a few recently who have categorically said, 'I am not going in there, I am claustrophobic and will not cope with the examination, but I will come'. Once they have come and seen the room and spoken to the girls [radiographers] they have quite often gone ahead with the examination at that point. The girls are very good they show them and let them lie on the table and that sort of thing, they can also have a pre-examination visit to get familiarised with the room and things. I really think that these sort of things can help patients who think they cannot cope with it but subsequently have managed and gone ahead. Many of our patients are cancer patients and they get very uptight thinking that they will not be able to cope with it or it may upset their treatment. But most of them do manage it with careful handling.

I.Ehm, yes that is interesting and fits with my

73 findings so far. What patients' think may happen is
 74 often far worse than what actually does happen.
 75 We still get the odd one, may be one a week who just
 76 refuses point blank to have it done but not that many
 77 and that is out of a very high workload.

14.analogies 78 **I. Are you familiar with terms the patients use such as**
 79 **tunnel, polo etc**
 80 Yes quite common aren't they

2.concerns 81 **I. Yes, did you think there is any difference between**
 82 **males and females in terms of compliance?**
 83 From personal experience I would say that I have had
 84 more men faint than women. I think there is a lot of
 85 bravado in it, A lot of men Don't want to admit that
 86 they are worried or have a problem where as in actual
 87 fact if they did we would be able to deal with their
 88 problem. I don't know if it's a verbal thing but women
 89 seem to be able to express how they feel about
 90 something and probably get their feelings allayed
 91 better. Some of the biggest panickers I have had are
 92 men. A lot more women take up the offer of a pre-
 93 examination, I am not sure why, possibly more of them
 94 admit to having a problem beforehand. I don't know
 95 whether it is a male ego thing or what but more of the
 96 men will just turn up

23. Self 97 **I. Were they for specific reasons or?**
 98 Well as it turned later yes, but because they hadn't
 99 disclosed that they were claustrophobic beforehand
 100 since they hadn't expected it to be such a big problem.
 101 The good thing about it was that having been through it
 102 myself I knew exactly what the problems were. You know
 103 I could say, 'You're not strange you're not weird and
 104 you are entitled to feel how you feel'. Since I've been
 105 there myself I do understand them much better, or at
 106 least I feel as if I do.

3.expectations 107 **I So do you think that it is a good idea for**
 108 **radiographers to experience this?**
 109 I think that all of our radiographers who work in MR
 110 have been in the scanner at some point.

23. Self 111 **I. The other thing that is evident from the literature**
 112 **and my results is the influence of family stories.**
 113 **Have you any experience of that at all?**
 114 You do get a bit of that, such and such in the bed
 115 across the ward said it was absolutely horrendous and
 116 it turns out that he had an ultrasound or something,
 117 you know not the same thing at all. Actually I have
 118 noticed that more in cardiology, if the nurse catches
 119 on to these rumours they tend to deal with them very
 120 effectively and reassure the patient. There are
 121 leaflets on the wards but mostly it is down to the
 122 doctors when they tell the patient they going for a
 123 scan they have to explain it there and then before the
 124 other patients get in.

11.recommendations 125 **I. You mentioned cardiology, are there any specific**
 126 **stories from there?**
 127 You get patients who say, 'oh the man in the next bed
 128 had one it was awful and he nearly died' but the
 129 interesting thing is that this only ever comes out at
 130 the end of the examination and they say, 'and it wasn't
 131 nearly as bad' ((laughs)). They may be having

22.Stories 132

9.other radiology 133

5.information 134

22.Stories 135

22.Stories

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palpitations all the way through but they will not tell you until the end.

9.other radiology

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I. Umm, it seems to be what represents reality at that time. Do you think there are other areas within the department that poses such problems for the patients? I think anywhere can, I mean someone coming for a chest x-ray who has never had an interaction with the hospital can be nearly as phased as someone coming for an MR who has had a lot of interaction with the hospital because to them it's still a big deal. I think that we need to look more closely at areas such as the barium room and the more unusual examinations. However cardiology, CT and MR seem to be the biggest problems.

7.misconceptions

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I. Umm, I would agree... I really think it has to do with the fact that a lot of people, in the whole of their life, do not have an awful lot of interaction with the hospital. I mean for a while I hadn't had as a patient; no matter how long you work in a hospital it is so different on the other side. I have a very bad time with surgery and everything but I think it makes you makes you more empathetic with patients. I think that I realise now patients come in with a lot of ideas and misconceptions and most of them are wrong.

20. Perceptions of the radiographers

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I. Okay, a final question if I may, what do you think our [radiographers] role is?

I think a lot of it is information, I think we could do an awful lot more to actually let others know what our role actually is, everyone calls you nurse or doctor. I think that radiographers are noturiously poor at publicising ourselves, I mean most of us don't even correct the patient if they call us nurse. I think that we really need to show that our role is vital and inform the patient clearly and precisely of what our role is and what is expected of us.

I. Thank you very much for your time, your help is very much appreciated

RAD2EXP

I. Could you just briefly outline your career history to date?

Okay I worked at another hospital doing general radiography and worked on an exchange to Australia and stayed there for 7 months. Then I got a job in another hospital doing CT and A&E there and now I am at this hospital doing MR and CT mainly, in addition to some casualty work as well.

..works in ct/mr

I. Okay, thanks for that, now the scan that you have had, was that an MR scan?

Yes it was.

I. I assume that you have a reasonable knowledge and some experience of that modality beforehand had you?

Yes I did.

I. If I were now to show you a picture of an MR scanner, what would it represent or symbolise to you, the very first word that comes into your mind?

God, I am looking at it now, technology I think if I just look at it now.

18.Symbolic Significance

I. Fine, you went along and had your scan, so can you tell me the story of your scan; what you were expecting to happen?

I had to have a scan of my neck and I assumed that it would be quite quick, which it wasn't, I did get a bit nervous towards the end of it because it did seem to go on a bit. That was the main bit really..... (long pause)

I. Was it an enjoyable experience?

Not the best thing that I've ever done in the world. No it was longer than I thought and time did seem to stand still. Even though I knew I could get out if I wanted to I knew that I needed to stay in there and get it done really. I kept thinking towards the end, how many more of these are they going to do and I am going to get out of here ehm I was so concentrated on not moving because I knew that I had to keep still that it was becoming harder and harder not to move as the scan went on. That was it essentially.

3.expectations
2.concerns

23. Self

27.Compliance

I. Were you claustrophobic at all or not?

No just getting edgy towards the end really, I had had enough.

2.concerns

I. Was the whole experience analogous or similar to anything else that you have experienced in life, however strange or bizarre?

Ehm ... probably caving, I've done that and it was similar, but I couldn't wait to get out of the cave either ((laughs)). But that is the only thing I could compare it to.

14.analogies
16.Control

I. In terms of communication since the radiographer is through in another room, did that bother you at all?

No not at all because I know they [radiographers] are at the end of the buzzer if I want them.

16.Control
15.Communication

I. So it didn't present you with any problems other than

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the fact that it went on a bit long and you wanted to get out. Would that be a fair summary?

Yes

I. If we can move on now and look at a different perspective, what do you think it is like for a patient to have an MR scan?

27.Compliance

Ehm, a lot of them say that it is not a nice thing to have it is very noisy, it lasts a lot longer than they anticipate it to last and also they are concentrating so hard on trying to keep still that a lot of them are very very relieved when it is finally over.

I. Do many of these patients have misconceptions or myths about what is going to happen?

7.misconceptions
23. Self

Yeah, they think they are going to stay in there for at least an hour and we have a back to back system where most of the CT patients think they are having an MR because that is what they have been told by their neighbours. Ehm..sorry we need to speed this up because they need this phone quickly.

I. Do you think that patients experience similar dilemmas in other areas of the department?

We have a medical emergency I will have to phone you back.

[A short time later]

I. These potential problems with technology, are they evident elsewhere in the radiology department do you feel?

9.other radiology
14.analogies
25. Technological association

Ehm...no I don't think so, people seem to be prepared more for what they are going to have in the other departments because they are used to seeing it and that equipment has been around for quite a long time and they are more familiar with it. This MR technology is new to them and they are concerned that they are going into a tunnel and are going to be left there.

I. From your time spent in MR would you say that male and female patients have the same level of compliance?

If people are told what is going to happen to them and they are prepared for it then I think they do comply and male and female comply equally the same.

I. Do you have a system where the patient can come and look around beforehand?

We do yes, they can come by and we will show them the scanner and they can fill in a form if they are really worried. We can go through it with them and actually put them in [MR scanner].

I. What worries do they have?

23. Self
27.Compliance
14.analogies

They are worried about the fact that they are going into a tunnel, they are going to be left in there with nobody in there, it takes a long time and they will not be able to keep still for long enough, or they are going to come and waste our time if they don't go through with it; some are actually worried about what their relatives are going to say if they cannot cope with it. I think the main concern is about what is going to happen to them, does it hurt.

23. Self

108 I. Do many patients tell you about their feelings at the
109 end of the procedure?

110 Oh yes, generally they say that it wasn't as bad as they
111 thought it might be.

22. Stories

17. Coping Strategies

112 I. Have you any particular incidents that stick in your
113 mind?

114 Ehm .. well you get the claustrophobic patients and
115 things like that, we have one woman who could not do it
116 so we gave her sedation. When she came back the scanner
117 shut down but she was so worked up that she wanted to do
118 it and even though the sedation had worn off, she was
119 with her friend and she told her stories and they got
120 through it in the end. So with a bit of determination it
121 can be done.

122 Is that it I have to deal with this problem?

123 I. Of course okay, that's great thank you very much
124 indeed.

RAD3EXP

I. Can I please ask you to outline your career history to date for me?

I qualified about 20 years ago and apart from a few years where I was looking after my children I've always been in radiography. I've worked in the public and private sector. I've mostly been doing general radiography not particularly in the specialist areas.

..works in ct/mr

I. So you had an MR scan, what previous knowledge did you have of this modality?

None at all, actually. Where I worked is a very small department and we have not had MR. I knew vaguely it was Magnetic Resonance Imaging but that was about it really. So for what I knew I may as well have been a layman.

18.Symbolic Significance

I. So if you were to imagine in your mind a picture of an MR scanner, from your perspective as a patient, what would it symbolise or represent to you; the very first word that comes into your mind?

Claustrophobia, but it's not quite accurate because I was having a knee scan and wasn't completely inside the machine ehm.. but panic, no panic is what it represents.

3.expectations
27.Compliance

I. Can you tell me first of all, what were you expecting to happen?

I was expecting more or less what happened, I'd seen pictures of these machines so I knew I would be lying down and I knew it would be noisy and it takes a long time for the scan. So I was expecting most of it I suppose but the actual ehm....reality was not..I found ehm ...much more un settling than that; I found the keeping still extremely difficult.

23. Self
4.feelings

I. Can you remember what you were thinking about and what thoughts you had in your mind at the time?

Well I was trying to concentrate on not moving, I felt that they hadn't immobilised my leg very well, because I knew that must be important. My leg was raised with my foot and ankle dangling, so I thought any minute now I am going to move my knee. The more I concentrated the more I thought I would move and I just got into a viscous circle and I couldn't listen to the music on the earphones they had given me.

So actually it was a total....I wanted to say to them 'stop, stop please come and immobilise me properly'.

11.recommendations
15.Communication

I. So even though it was your knee you still felt slightly claustrophobic did you?

I did I feel that it was an interminable amount of time; I found out that it was only about half an hour. When I got out I felt as if I wanted to run from that that place because the time was interminable and nobody ehm told me, I think there should be some form of clock. At least then you can see the minutes going by, they should have broken in at some point and said 'you have another 15 minutes or whatever'.

4.feelings

I. Yes

I thought I was never going to get out, I honestly thought that I would die from panic I felt so bad. I thought any minute now I am going to ruin this I am going to get up and run away from it because it just went on

58 and on and on and I thought I can not tolerate this any
 4. feelings 59 longer. The thing about it is that I never thought that
 60 I would react that way.

61 I. Can you remember what you were thinking about?
 62 I was day- dreaming about nothing particularly
 63 interesting but I think it was because I knew that any
 64 minute now I will ruin this by moving my knee. I thought
 4. feelings 65 that if I move then I cannot go back into this again
 23. Self 66 because I just wanted to get away. It sounds completely
 67 irrational now but I can remember coming back to work the
 68 following day and relating the incident to my colleagues
 69 having a sense of complete bewilderment about my emotions
 70 over this. It was very very strange.

71 I. **No thoughts from your childhood?**
 72 No not that I remember

73 I. **So are you saying that your colleagues were surprised?**
 74 They were very surprised that I had had such an
 75 experience, none of them had had one, so they couldn't
 7. misconceptions 76 imagine it. I honestly thought that it would be dead
 77 easy and it wasn't.

78 I. **Can you think of anything else in life that would be
 similar or analogous to the MR scan?**
 79 Well being stuck in a tube in the London underground
 14. analogies 80 where nobody tells you when you are going to get out and
 81 you cannot go and you can't open the doors. That is a
 82 claustrophobic panic.

83 I. **Are you normally claustrophobic?**
 84 No, and there is no reason why I should have felt like
 85 that because my body was not enclosed. I just felt that
 23. Self 86 they should have organised something, as a patient I had
 87 no knowledge of how long ... half an hour is a long time
 19. Isolation 88 lying doing nothing, I couldn't even see the control
 89 panel, so I couldn't see any operators or anything. Once
 90 they had gone the door was behind me and I was totally
 91 alone, I mean if I had been totally paranoid I would
 92 imagine that they [radiographers] had gone off and
 93 forgotten me.
 94 Do you know people would think that.

95 I. **The communication can be a problem especially with the
 radiographer in the other room...**
 96 Well could the room be somewhere where you can see them?
 19. Isolation 97

98 I. **Yes, you would have thought so, but you are not on
 your own in thinking these things.**
 99 Really, I thought that it must just be me.

100 I. **You have probably answered some of this already but
 have you recommendations that you could make that might
 help to improve the experience for patients?**
 101 Well really what I said it is of paramount importance;
 102 you must be able to see another human being even if they
 103 are not looking at you, if they are sitting at the desk
 104 even, so long as you can see them to keep in touch.
 105 Apart from anything else it would pass a few minutes just
 106 watching them and the other thing is time. If they had
 107 some way of rigging up a clock with a count down at least
 108 you would know you were getting somewhere.
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11. recommendations 23. Self
 23. Self

23. Self

I must have done because it felt as if I have been in there for 3 hours.

I. Okay, perhaps if I could ask you just a few general questions now. Do you think that many patients have misconceptions and myths about what is going to happen with high technology imaging procedures?

9.other radiology

I am sure that a great many of them do yes, with me working in general I cannot tell you much but listening to others and knowing the things that can occur with a normal x-ray I can well imagine. The high technology stuff [equipment] is obviously a bit further removed.

I. In your experience in general, is there any difference in the compliance of males or females or is no possible to generalise?

Difficult because men and women tend to react in different ways, I would say 50:50 really.

I. What about other areas of the department?

9.other radiology
4.feelings
23. Self

Well it depends, I think in radiology as long as there are people around, I think in angiography and things like that, the patient is still up against the machine but other people are in the room with them. I think it is daunting with the machine particularly in radiotherapy but then of course the patient has been lying there for quite some time as in MR. I don't think the problem occurs as long as the operators or nurses or radiographers or whoever it might be are in the room with the room with the patient.

The equipment can be as big as you like as long as the human being is there to hold your hand in inverted commas.

I. That is very interesting thank you indeed.

RAD4EXP

1. Just to start us off, could you outline your career to date?

I qualified in 1980's got my first post as a basic grade a t another hospital , worked there for about 3 years and moved because my husband's job was moved and I was left without a job to go to, so I did a couple of locum posts and agency work in and the area. I then got a senior II post and went from there into my academic career .

1. Okay that's fine thank -you, now you have had an MR scan, is that correct?

Yes, I've had 2.

1. At that time what was your experience/ knowledge of MR?

I never worked there as such but I went in and did a week's voluntary work but I wasn't a full member of staff. So yeah I had a good idea since I was working as a radiographer for that week but just not employed by the hospital.

..works in ct/mr

1. If you can now imagine a picture of an MR scanner, what would it represent, what would it symbolise to you, what is the very first word that comes to mind?

Imaging, I guess

18. Symbolic Significance

1. Okay so you went along for your scan, can you tell me in as much detail as you can what happened perhaps starting off with your expectations?

It was about 4 years ago, the first scan was a head scan, I thought it would be exactly what I was expecting. I was to be fair, quite unwell at the time, which I think might have influenced how I reacted to it, ehm.. it was a basic head scan follow by a contrast scan. It was a fairly old scanner and because I was poorly I wasn't really taking that much notice of the appointment but it was an old scanner with a long straight bore and the radiographer who was doing it I actually knew, I thought that this would be useful and make me feel better but actually it seemed to put more pressure on me when I felt awful about the scan, I thought well I can't say this because I'm going to look stupid because I am a radiographer.

23. Self technological association
4. feelings

1. Mmm that seems to be a common problem for radiographers who have had scans. Can you remember the thoughts that were going through your mind at the time or were you nervous in anyway?

Not particularly, I know that you don't want medical details, but at the time they were scanning for an acoustic neuroma and I was nervous about the diagnosis but not that nervous when I went in; I just felt unwell because every time I moved I was being dizzy and sick, so I was feeling pretty lousy by the time I got into the scanner.

1. Did you feel claustrophobic at all?

Only once I went into it, soon as I went into it, that took me by surprise and I wasn't expecting that to happen. I didn't think that I would react badly at all, I knew what to expect, how long to expect it for, I knew

4. feelings

4.feelings
25. Technological association
23. Self

58 it was going to be loud, I knew it was going to be noisy
59 and close. I had never actually been inside one before
60 and I was surprised at how close it was and within one
61 minute of being in the scanner I just wanted out of
62 there. It really took me by surprise I wasn't expecting
63 to feel that way at all.

16.Control
17.Coping Strategies

64 I. So did you think about how you might be able to get
65 out of there at that time or did you grim and bear it?
66 I was more concerned that I would look completely stupid
67 if I said that I couldn't tolerate it and I had to talk
68 myself through it saying, 'Well other people have done
69 this, you know it is only this length of time', but
70 unless I was conscientiously doing that the entire time
71 or the minute I thought, okay I am all right now I can
72 tolerate this, I started to panic again and wanted to
73 come out. So no I had to tolerate it right the way
74 through.

23. Self
25. Technological association

75 I. What sort of thoughts went through your mind other
76 than the thoughts that you wanted to get out of the
77 scanner?
78 It was the enclosed nature of it, that's what it was,
79 when I had contrast and came out, I almost, almost said,
80 'You can't put me back in there'. Totally irrational,
81 totally irrational.((very emotional voice))

82 I. Have you ever considered yourself to be claustrophobic
83 before in anyway?
84 No, no I've even had thoughts of wanting to go pot-holing
85 ehm.. I've been in many confined spaces without any
86 problems what so ever in the past.

14.analogies

87 I. So was the whole experience similar to anything else
88 in life, however strange or bizarre?
89 Ehm... no I don't thing so, no.

23. Self
4.feelings
24. Orientation

90 I. People have described it was being buried alive, the
91 coffin, the tunnel, terms which I assume you have come
92 across.....
93 No I wouldn't it was literally the physical space and for
94 the first one I felt as if my head was just moving
95 slightly, I mean it wasn't, but it felt as if it was and
96it was get me out of this noise, get me out of this
97 confined space and give me somewhere to put my head on a
98 soft pillow and just get my bearings again.

15.Communication
25. Technological association

99 I. Okay that's fine thank -you. Communication, did you
100 find communication to be a problem with the radiographer
101 in one room and you in the other?
102 I actually had a nurse sat next to me at the time so I
103 wasn't in the room on my own as such but she just sat
104 reading a magazine so she wasn't particularly much help.
105 I think partly because... I don't know whether she thought
106 that if I moved she was risking me moving or whatever or
107 just having her there was enough, but although she was in
108 the room, she wasn't in the room for me; she was in the
109 room sat with a magazine and happened to be next to me
110 and because it was an old type of scanner she was still
111 quite a distance from me so I was aware that she was
112 there but I couldn't really see her.

17.Coping Strategies

113 I. The fact that the radiographers were in the control
114 room, was that a problem or not?
115 No not with the nurse next to me and also because I knew

17.Coping Strategies

116 that that would be the case. I wasn't expecting them to
 117 be in the room I suppose so I wouldn't even have occurred
 118 to me that they should have been in the room in the first
 119 place, so no I wouldn't have had a problem with that I
 120 don't think.

I. Have you any recommendations that might help to improve the whole experience for patients. Obviously the introduction of open – bore scanners has helped tremendously but is there anything else?

11.recommendations
 15.Communication

121 The second time round I was in a slightly newer scanner
 122 and the radiographer spoke more to me throughout the
 123 scan, 'Are you sure that you can stay it will be another
 124 5 minutes or whatever, are you still all right' and there
 125 was more continuous communication which was helpful. Ehm
 126 I think having someone next to you, if they just
 127 physically let you know they are there, even just a hand
 128 on the leg or something to actually... you cannot see them
 129 but you know they are there and again occasionally saying
 130 'are you okay'. Having arranged how you would respond to
 131 that, maybe if you could reach a hand, you know to let
 132 them know if you were okay or not. I am well aware that
 133 you don't want people lifting their heads up saying yes
 134 or no and moving and ending up having to have the whole
 135 thing again.

17.Coping Strategies

I. Okay, that's good. You are perhaps not necessarily able to answer these next questions since they are mainly for clinical radiographers, but let's see how we go. What do you think it is like for a patient to have a scan, is it a fearful experience or not?

136 I would say absolutely yes, from my own experience even
 137 though I knew what to expect I was still..almost rigid
 138 with fear and panic. Now if patients don't know what to
 139 expect then I would think that yes it must be horrible
 140 for them, having said that I've also spoken to people who
 141 have had them and they thought that it wasn't that bad
 142 so....((long pause)) ..but I would always err on the
 143 cautious side and expect them to be nervous and make them
 144 comfortable so that you can do what you can to help.

I. Are you aware of any patient misconceptions or myths about imaging technology?

145 Ehm with MR I think they have no idea how long they maybe
 146 in the scanner, they maybe thinking if it's horrible it's
 147 horrible but it's only 2 minutes and I think that may
 148 throw some people, again I knew what to expect time wise,
 149 so I think that does make it easier to cope with, so back
 150 to communication, the explanation saying, 'This will take
 151 so long, there are several stages to it and I can talk to
 152 you in between the stages'.. but yes time I don't think
 153 they [patients] have any appreciation of and what the
 154 scan is but I am not sure that they know what the scan
 155 is, does it matter that if they know whether it's
 156 radiation or magnetism, I don't think that is as
 157 important really.

3.expectations
 22.Stories
 22.Stories

I. Patients come along with ideas of course, some correct others not so, where do you think they get these ideas?

158 Ehm in the main it has got to be through other people
 159 that have had them, in fact that is a big problem, if
 160 people have had bad experiences they then know someone
 161 else who is going to have it and they talk to them and
 162 they [patients] almost go along expecting it to be awful

3.expectations
22.Stories
22.Stories

because they know someone else who has had it and it was awful, even if you haven't really explained to them why it was awful. So they go expecting it to be worse than it possibly is but I think the main place they get it from is other people who have had scans.

25. Technological association
9.other radiology
18.Symbolic Significance

I. Do you think these potential problems or fears of technology can occur elsewhere in the department?
Ehm.. way back when I used to do remote barium enemas, I thought that was a problem for patients because it was so invasive as well and suddenly you all disappear and it must feel like you [patient] are being watched by the people behind the panel. Cardiac as well I guess, because of the size of the equipment and the way that it moves around you may well present problems, but not in the same way as the claustrophobia. Ehm I think general x-ray equipment. I don't know if it's because we are so familiar with it but I don't think that causes the same problem because you are closer to the radiographer, you are sat on a bed that you are used to or a chair or whatever. So yeah I think maybe cardiac, maybe remote bariums I can't think of anything else really.

I. Okay, thank you very much indeed.

RAD5EXP

I. Can you please outline your career history briefly to date?

I qualified about 20 years ago, worked in another hospital and was superintendent in a private hospital doing CT and ultrasound and all general stuff. Then I moved and worked for another company or 2 years selling x-ray film until 4 years ago when I started working in breast screening.

I. What experience or knowledge did you have of MR before you went as a patient for your scan?

I only had the theory of the MR scan since I had only worked in the CT room before.

..works in ct/mr

I. If I were to show you a picture or imagine one in your head, what would it symbolise or represent to you in your mind, the very first word?

A big fat toilet roll

18.Symbolic Significance

I. Can you tell me in as much detail as you can the story of your scan, perhaps starting off by telling me what you were expecting to happen?

I arrived for the scan and I was slightly apprehensive since my mother had had one and she said it was dreadful, but I knew there was no reason for it to be scary except that it would be loud. I didn't say that I was a radiographer and I didn't know the staff that I was dealing with. We went through the questionnaire extremely quickly and I got really scared by the thought that if I didn't know that I had a metal foreign body in my eye and I did what would happen to me?

22.Stories

23. Self

I did ask the radiographer to keep talking to me throughout the procedure so that I would know what is happening and she [radiographer] agreed. So I got into the machine, lay down and then pulled me out; I was very glad that she pulled me out because I needed to try it out and then come back out again. Then I went back in and they said it will be 3 minutes or so, that was okay, I didn't have head phones because it was for the neck, I had a panic button and it seemed forever until she pulled me back out of the machine and spoke again. It was at that stage that I knew that I needed someone talking to me and as soon as the noise was over, I made a big impact on me, and I knew that I wanted to check where they were. I needed to see what was going on and I have learnt that even if you the patient for only 2 minutes it seems an eternity for them.

5.information

15.Communication

17.Coping Strategies

19. Isolation

I. So are you saying that you didn't know where she had gone?

Absolutely, no idea and I worried about that, she [radiographer] was sitting at the console but I didn't know that I was still stuck inside this machine and it's that noise it's so loud and then at the end so so quiet.

19. Isolation

25. Technological association

20. Perceptions of the radiographers

I. Can you remember what your thoughts were while you were in the scanner?

While in the machine I was controlling my panic, basically telling myself, 'This is okay, I know what is happening, it will be all right'. Then I was very relieved when I came out. If someone would have asked me on leaving the hospital, how was that? My first words

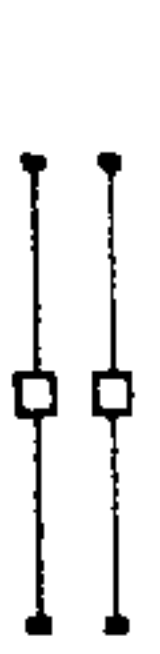
16.Control

21. Moulding Preconceptions

17.Coping Strategies

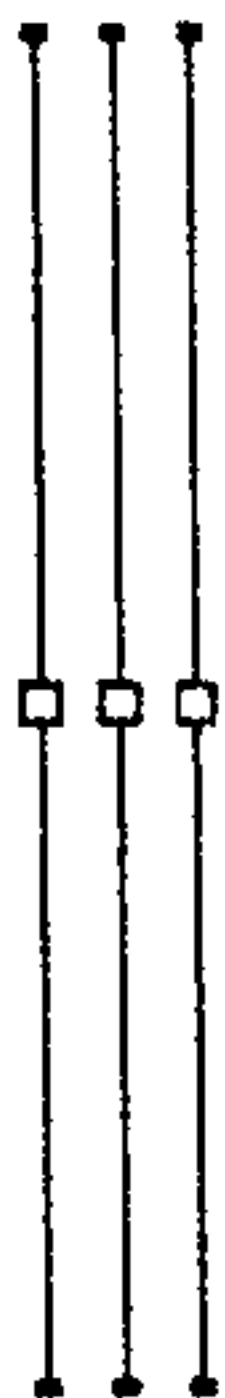
<p>16.Control □ □ □ 21. Moulding Preconceptions 17.Coping Strategies</p>	<p>58 59 60 61 62</p>	<p>would have been, 'That was dreadful'.</p>
<p>16.Control □ □ 23. Self</p>	<p>63 64 65 66</p>	<p>I. Mmm powerful emotions. Did you feel claustrophobic? I assumed that I would be claustrophobic, so I kept my eyes close and I was okay I think but that was self-control.</p>
<p>17.Coping Strategies □ □ 14.analogies</p>	<p>69 70 71 72 73 74 75 76</p>	<p>I. You said that you were trying not to panic and you were battling against that, how did you manage to do that? Byjust((long pause)) ..how did I do it, telling myself not to tense up, keep my body relaxed then just talking to myself as I would in the dentist.</p>
<p>14.analogies □</p>	<p>79 80 81 82 83 84 85 86 87</p>	<p>I. Is the whole experience similar to or analogous to anything else in life, however strange or bizzare? Ehm.. no I don't think it is similar to anything else that I have come across, the thoughts of being in this confined space, maybe if my head had been out the side it would have been better but if your whole head is inside and there is no way that you can move, I cannot describe like it anything else, it's unique I think.</p>
<p>20. Perceptions of the radiographers 23. Self</p>	<p>89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110</p>	<p>I. Does the fact that the radiographer leaves the room ever present a problem do you feel? I think having been a patient in that situation; I would feel that it must be. Women , even within breast screening must... I mean we always leave the room, we position a patient and then we leave the room and they don't know why we are leaving them and how long we are leavening them or we stand behind a screen, why are we standing behind a screen? Even if, and especially in breast screening, the exposure can be a few seconds that must still feel like a long time. I make the point of always talking to the ladies so they know where I am since they cannot always see you and I really think that this is a big issue.</p>
<p>15.Communication □</p>	<p>112 113 114 115 116 117 118 119 120</p>	<p>I. Is there anything that you could recommend that would improve the whole experience of having a scan? I actually think talking to the patients throughout the procedure and giving a count down, like one minute, two minutes, nearly there. If they know that they have human contact and especially just after the scan sequence has finished to keep talking to the patient. The patient must know that they are in contact with a human at all times.</p>
<p>23. Self □</p>	<p>121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145</p>	<p>I. Now I appreciate that you don't work in MR/CT at present but have you come across many misconceptions in terms of what they think is going to happen? Ehm.. I can only really comments on breast screening, others give an opinion and when the ladies come out I can quite imagine them saying that was dreadful like my experience in MR. They remember that awful experience and pass it straight on, I wouldn't say that now about MR, yes difficult, yes dreadful but however nothing happened to me, whereas women come in now for breast-screening and they have heard all the horrible stories and we are prepared for that. It is much better if the woman comes in and says that she is anticipating this to be dreadful because you then have the chance to put them at their ease.</p>
	<p>144 145</p>	<p>I. Mmm, you mentioned before that your mother had an MR and that it was awful, what was it that made it awful for</p>

23. Self
17. Coping Strategies



16 her?
17 She said it was confined, a loud noise, the unit was
18 right up above you and she'd had one and then for a
19 follow up scan she had to have a tranquilliser and
20 managed it then.

9. other radiology
18. Symbolic Significance
11. recommendations



21 I. Apart from MR and breast screening, do you feel that
22 the problems with the technology is evident anywhere else
23 in the department?

24 Interestingly, yes because people don't have enough
25 knowledge about radiation and we ask if they have been x-
26 rayed anywhere else before. I think they believe that is
27 just to save on the radiation dose but it is only us
28 checking their history. So therefore they think they
29 have had 3 x-rays yesterday, does that matter, they are
30 putting radiation into perspective and yet we do have to
31 be careful. Educating the public is okay, if it's the
32 size of equipment or it looks like nothing they have ever
33 come across, ehm for some people that's not a problem but
34 other people are very worried.

35 I. Thank – you very much indeed for your time.

RAD6EXP

I. Just to start us off really, could you just briefly outline your career to date please?

I qualified in 1978 and worked in a city for 4-5 years as Senior radiographer, junior radiographer and then went and worked in another city and became a Superintendent there, stayed there for about 6-8 years and then came here in 1988 and have stayed here ever since, was Superintendent and now Directorate Manager.

I. So before you had your first MR scan, what sort of experience and knowledge did you have of that modality?

Very little really, I knew that it was a tunnel, I'd seen some pictures, but not actually ever visited one, so it was actually quite new to me.

I OK, so if I were to show you a picture of an MR scanner, what would be the first word that came into your mind, what would it represent or symbolise to you?

A tunnel, until then I hadn't realised it would be so claustrophobic, but I think it was how I was dealt with really.

I Ok, well moving on if you could give me as much detail as you can remember, starting off with your first scan, what went on, start off with what you were expecting to happen, the room and your feelings?

It was an IGE1.5 Tesla probably about 7-8 years ago and I was placed in the machine, no instructions, didn't know I was going to be moved right back and couldn't see out because they hadn't given me the emergency light, so I wasn't very happy as you can imagine, because I didn't know where I was going and was getting quite disorientated, so I asked them to take me out again and they provided me then with a mirror, at least I could see out. I found it disconcerting that when you looked at the viewing window I could see them laughing, one with her feet on the desk.

I oh dear

Then they decided to have tea, and I just thought all in all it wasn't very professional. I was glad to get out of there, and they knew I was a radiographer. I found that quite amazing, not that I expected any more than the patient but they might have behaved professionally.

I Absolutely, yes. Can you remember what your thoughts were, you mentioned being claustrophobic and obviously a bit fearful, but can you remember your thoughts were at all.

Yes, I was actually very unsteady on my feet at that time and because they said you had to close your eyes I just felt I had no reassurance, I was just put in the machine and got on with it. I just felt that having the mirror was great, being stuck in the long tunnel for a very long time - I didn't imagine I would be claustrophobic because I wasn't claustrophobic ever before.

1 So you weren't claustrophobic ever before, but you felt claustrophobic inside the scanner right?

..works in ct/mr

18.Symbolic Significance

20. Perceptions of the radiographers
2.concerns
5.information
24. Orientation

20. Perceptions of the radiographers
2.concerns

16.Control
4.feelings

22.Stories
23. Self

I didn't know where I was going , I didn't know how far back I was going in, I had this coil around my head and was sort of restricted you know. I think they make people do things they don't really want to do.

I Mm - so was the whole experience similar to anything else in life, however strange or bizarre.

No not really, I've had quite a lot of things done to me, research and tests as part of my illness but this was the worst thing I've ever had done.

2.concerns

I So that was the worst thing you've ever had done, of all the tests?

25. Technological association
15.Communication

I've had water poured in my ears, tilting tables, spinning chairs in the dark and stuff like that but the MR was the worst, because it was a lack of instruction.

I OK - how about the 2nd and 3rd time, was that any better?

23. Self

2nd time I had it in my own department I made sure of the patient care, that there was always someone there to make sure that you could get out. That's quite important when you're wearing that head coil, that someone is actually there watching you, the way the place is designed was to allow that you had a good view from the actual tunnel and the operator. That was a new unit that we had actually put together ourselves - I was very keen on patient care having been through it myself.

I Yes that was very useful in that respect.

20. Perceptions of the radiographers

They couldn't leave the patient , they had to be there at the end of the intercom if anybody needed anything. Patient care was most important and there's more likelihood of getting people in.

I And the 3rd time?

19. Isolation
20. Perceptions of the radiographers

That was in London, they disappeared from the window ((said with feeling)), I was a bit more confident, but I knew where I was going, I knew what was going to happen, but I find that very disconcerting when you're in there and you don't see anyone in the window, it seems a bit strange.

I That's a key factor that, and the patients I've spoken to - it comes up time and time again - communication through this little window, because you can't see what's there and what's going on.

The worst thing is not having someone there - you know, thinking if I have to get out of here, you get more used to it having had a couple, you know it will be over in 40 minutes and you can get out.

I So you work in an MR unit ? Oh! I see you're part of the department. OK.

So, as a radiographer, what do you think its like for a patient to come and have a scan?

22.Stories
4.feelings

I think quite frightening really, it's the unknown, they are told things like the noise is terrible, which I didn't find to be a problem, I just feel that they have to be aware that if they want to get out they can, the number of people who are claustrophobic is quite high, more than people actually realise, its only when you put them in there that they realise they've got mild claustrophobia, and that they can actually bring someone with them to stand at the end, to reassure them. I think its more difficult for larger people, I'm

22.Stories
4.feelings

quite small, but larger people would find it difficult, you know some people actually touch the sides which is actually quite difficult for them.

I Absolutely, have you come across many misconceptions or myths that patients have presented when coming in for scans?

17.Coping Strategies

Yes I think that having had the experience myself, they said I believe its really noisy and I say well actually I use the noise to count the pulses - I use it as a rhythm, it can actually be quite relaxing, I know some people wear ear-plugs, but I never did and 40 minutes goes quite quickly and you can bring people in holding on to your leg or hand whatever. You'll get through it you have to do it for the diagnosis.

I Interesting point you raise about counting the pulses, did you find that you lost track of time in there?

17.Coping Strategies
16.Control

I found that people would say to you now this sequence will take 2 minutes and it didn't and it would be 5 minutes- so you knew that they weren't telling you the truth, and that's important that people tell you the truth. Time is very important and I think to have a clock there is useful. When you are in there you do set yourself limits and count down. If they say the session will be 5 minutes and it goes to 7 minutes you loose trust in them.

I Right, any other recommendations, you know you've been through 3 different episodes, is there anything else you feel would be useful?

11.recommendations

It would be useful to have a well lit tunnel and cool, and it would be nice for people to bring in their own music that they can relax to. I think that companies are now more aware of getting people through, I think colours are also important, lighting, those are the features that we brought into ours that I was quite fussy about, how patients were going to re-act, ours now looks more like a dining room, we have padded doors and a picture behind, curtains and stuff like. The colour peach, we try to get a soft atmosphere, have a nice waiting place. Plenty of literature, staff friendly and willing to give their time to talk to them.

I So being a patient, on the other side of the fence as it were, how do you perceive the role of the radiographers in that unit.

20. Perceptions of the radiographers
15.Communication

I think they're very high profile, I think they can either make or break a patient as she goes through, I think if they give time as proved in my case - the first scan I had the radiographer just rushed me through, no explanation, no support and I vowed that if I ever saw them again they wouldn't get a job with me, so I didn't have a very good impression, and really I think that ruined me for my next time you know, and a lot of people that come for MR have to have follow-up scans, when they've had a bad experience to start off with they lose their confidence for the next one, so I think its very important that there is a way of talking to patients, re-assuring them and still get through the number you have to meet targets and have the literature sent to their home, so that they are not delayed on the day. You have to come over as a very calm person, very re-assuring.

I I know you don't work on the unit, so you may find it difficult to answer the next question, but do you find there's more of a problem with compliance with males or females, or is it difficult to say?

The males - I know that sounds a bit daft but, maybe he felt a bit awkward, knowing I was superintendent, perhaps he thought I should know what I'm coming in to, maybe he found it difficult to be re-assuring, I don't know, maybe it was a one-off, but I've got males in

153 my department and we focus very much on patient care, perhaps that
154 was a one-off!

155 **I From the patient's point of view though, maybe from what the staff**
156 **say to you, stories in the staff room etc, do you think males can**
157 **tolerate MR better than females or is it the other way around?**

27.Compliance

158 I think its maybe a mixture - I think women are a bit more open about
159 being claustrophobic, its just a macho thing, they get most of the
160 people through but it is ironic, I deal with people in the open
161 scanners, and I think its 50/50

162 **I Do you find that the men are reluctant to tell you beforehand?**

27.Compliance

163 I think so, they don't really have too much of a problem with
164 claustrophobics, but you have to give claustrophobics time, you know
165 to adapt to the situation, and usually what's worse is the thought of
166 it, the thought is worse than actually having it done - and I think
167 when you've had it done yourself, you can actually tell people that.

168 **I Right so self disclosure is very important**

17.Coping Strategies

169 Its very difficult, you know I say I've had a few now and you
170 sometimes think you've just got to get this over, I've talked to
171 people in there and they say you'll be fine....just keep on counting
172 that is the main thing.

173 **I So you imply or sort of suggest that strategy to them then?**

18.Symbolic Significance

174 Yes, well I've talked to people and when they say you know I've got
175 to go in the scanner you know, they come in (I always suggest that)
176 and have a look, they come in with their partner or whoever and then
177 bring their music or whatever and we usually can get them through. I
178 think its very important that staff can get them through.

179 **I So you were saying before that you deal with a lot of these**
180 **patients who are claustrophobic, you get them for referral.**

17.Coping Strategies

181 There's not that many, probably about 10 a year, out of about 3,500
182 sometimes they are too large to go in the magnet, but if they are
183 really claustrophobic you will never get them in a closed magnet,
184 sometimes you won't get them in an open one. They are usually
185 sedated then but we try to avoid sedation if we can.

186 **I Do you actually speak to these people?**

20. Perceptions of the radiographers
15.Communication

187 We do, you know they're nervous about going into an open
188 magnet, we try to explain to them what they're going to have
189 done to them really. How it is open and they can look out and
190 there is no problem with it.

191 **I Obviously if they're claustrophobic they're worried about an enclosed**
192 **space, but what else are they worried about?**

15.Communication
23. Self

193 I think people are afraid that they will panic and make a fool of
194 themselves, even worse than having the scan, they're afraid they will
195 look stupid, we have to re-assure them that people come in here daily
196 and they get through it. I think its important.

197 **I Do you think there are any other areas within the radiology**
198 **department that potentially there is a problem with the technology.**

9.other radiology

199 I don't think so, the only other thing that people worry about is
200 coming in for biopsies or needles, again it's the fear of the
201 unknown, people see ultrasound on the television all the time, linked
202 to pregnancies, x-rays, maybe we should ask casualty to do a bit more

9.other radiology □



on MR.

I Yes, they could do a bit more on radiology per say, yes. So its media portrayal isn't it

9.other radiology □

21. Moulding Preconceptions

I've never really seen an MR on TV, I've seen CT on TV but you know I think people always think of it as a tunnel, I know I describe it as a tunnel myself when telling people about it. I think probably more could be done about it, you know, education ,most people think of a tunnel as being dark and horrible.

I I totally agree with you, I think information should be given out beforehand. Right thank you very much indeed, that's very useful.

I To start you off really, could you give me a brief outline of your career history to date?

I've been qualified since 1969 - I trained at another hospital and came up to a Senior radiographer at another hospital, went on to the hospital as a Senior, then I had a 12 year gap to have my son, went back to the first city in 1988, worked up from Bank up to job-share Deputy Superintendent which was quite interesting, left there (job move for my husband) and went abroad, worked up to Senior 2, haven't got up to Superintendent, but I don't know if I wanted that really.

I OK, so the scan that you actually had, was it MR or CT?

MR of the brain

I OK, so what previous experience or knowledge of MR had you actually had?

None whatsoever only the reading matter, I've never dealt with MR at all.

I If you were to imagine a picture of an MR scanner in your mind, what would it represent or symbolise to you, the first word that comes into your mind?

Claustrophobia I think.

I OK, I'm interested now in the actual scan itself, what went through your mind and everything, can you tell me the story of your scan in as much detail as you can, perhaps you can start off by telling me what you were expecting to happen and then lead me through and tell me in as much detail as you can.

I was aware I would be having my head put in a machine, I knew what the machine looked like from diagrams and pictures I'd seen, what upset me was, stupid things really, I had to take my wedding ring off, another thing was I was told not to wear any make-up, not that I wear much but you feel very vulnerable. They then put my head in a brace, they said there was a periscope where I could see them but I couldn't; I felt very upset, didn't realise I was claustrophobic, I thought I was in my own coffin, stupid thought, but that's what came into my mind. I wanted to cry and I thought I can't, I can't cry because I'm a radiographer. Then it stopped and a voice said 'are you OK' and I lied and said 'yes I'm fine' and then they said they were going to do it again. I wasn't anticipating the noise at all, I don't think I was aware there would have been this noise so I thought I'd count the bangs and I remember counting up to five hundred and something. I then came out, but what really disturbed me, silly thing really, but the radiographer who put me in didn't take me out, no continuity, the radiologist reporting was the wife of the consultant I was under and when I asked if I could see her they said no. Having been diagnosed with ? acoustic neuroma I'm suddenly thinking hells bells what's happening? Afterwards, in about a week or so, I felt upset and

..works in ct/mr

18.Symbolic Significance

18.Symbolic Significance
23. Self

20. Perceptions of the radiographers
23. Self

20. Perceptions of the radiographers

20. Perceptions of the radiographers

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very disorientated, strange, peculiar.

I Was that because of the scan, or was it the condition you were worried about?

The scan, can I just say about my condition?

I Well no specifics please

I was just going for another hearing test and the consultant said I think you're OK but I've got to rule out acoustic neuroma - I'll have you in in a couple of weeks. Well the couple of weeks stretched to about 6 weeks and by this time I'm getting a bit anxious.

I mean its fine, he said it was fine, but its just the fact that nobody would say anything to me.

I That's great, so you're in the scanner, what sort of emotions and thoughts went through your head - you were very good and very descriptive in telling me about counting the bangs and things like that but can you remember what thoughts went through your head?

I couldn't see, I was very panicky and she said I would be able to see the operator and I couldn't see the operator. I tried to think of my family but that made me upset more - I did feel as though I was in a coffin, awful sensation, I suppose it was having my head in it, you know I couldn't see anything, I was getting very upset, and I was a radiographer, I didn't know the girls but they knew where I worked, just strange emotions, I'm going back now about 6 years and I still remember it with dread. But can't recall too much of my actual thoughts at the time.

14.analogies
4.feelings

I A lot of what you have just said is very common in people I've interviewed. Now you've said already that is like being in a coffin, that again is a common theme that I've had, is it like anything else, any other analogy you could draw, other than a coffin.

I don't know, I think once I thought of a coffin it just stayed with me - I didn't realise I was claustrophobic until I got in there, I mean since that experience I am scared of being in somewhere closed, it brings me back to that, it was the first time I realised I was claustrophobic.

14.analogies

I Did any of your thoughts go back to childhood, back to your early years?

No, definitely not

I Communication, now did you think that was an issue with the radiographer being in the other room

I don't know, I was nervous, maybe they thought I was a radiographer and knew all about it. I don't think I was anticipating the noise factor, a bit like Chinese torture I think. I would have liked, silly I know, but the same person who put me in to

4.feelings
23. Self

4.feelings
23. Self

take me out, I would also have liked to have been able to see somebody in the periscope, but I couldn't.

I Why do you think that was important to you, that the same person who put you in brought you out?

2.concerns
20. Perceptions of the radiographers
15.Communication

I just like continuity, I just thought that there was something wrong, that's all I could think of – it just would have completed the procedure, I was feeling very vulnerable and upset and this other person got me out.

I Almost as if the other person who had gone away was hiding the truth?

23. Self
20. Perceptions of the radiographers

I was upset with myself for being upset, being a radiographer, having trained as a radiographer.

I Can I just ask you about the information you received beforehand, was that useful to you and where did you get it from, was it various sources, or was it just one leaflet or something?

5.information
..description

I don't think I even got one, because I was stuck on a waiting list, and my 2 weeks wait that I was promised was about 4 weeks and then when I phoned up they said we didn't realise you were staff, and they put me in and just gave me a date to go, I don't remember having any literature at all.

I OK, so if you were to make some recommendations as to how they could improve the whole experience for the patient, what would you say?

11.recommendations
20. Perceptions of the radiographers
23. Self

One, I'm sure they do it now because this was early days, but literature to say what was going to happen, the sensation, the banging, I felt as though I was on a conveyor belt, one in one out, I know they're busy but I felt that no time was taken – a little 'are you OK, would you like a coffee' or tell me where to get a coffee, just something to calm me down and reassure me once I was out. I wasn't crying when I was out but I was very upset. Also I noticed, not that it referred to me, but for other people, there was no secondary waiting area, and I was embarrassed for the patients, that I was sitting, fully dressed, waiting for my head scan and they were sitting in gowns and the waiting area was opposite the cubicles and people could be seen getting dressed. I didn't think that was a good idea.

I Interesting stuff that, do you think there are any other areas within the radiology department that present these problems for patients in terms of technology other than the MR?

I don't think so much nowadays because everything is geared now to explaining the procedure. Where I work you had pamphlets on procedures, its very different now, we have one room general x-ray department now, but I think that's a thing of the past hopefully.

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I Hopefully it is.

A friend, not a radiographer, had no problems, he's not here actually, otherwise I'd have asked him, he had a shoulder MR in a private hospital, he felt fine, he said it was rather a nice touch, they asked if he wanted to bring a CD in with him.

I Yes that's common procedure, bringing in music.

It would have given me something to focus on rather than myself.

I Do you have MR in your hospital at the moment?

No,

We do bone densitometry scans here and one of the things I've hear is 'I'm not going in the tunnel am I' I say no you're not, so I've actually put that in the literature I send out. I say there are no tunnels involved, because when they think of a scan they seem to think they're going to be put in a tunnel

I Right, its what people think a scan is, its peoples interpretation of a scan. That's very interesting. Have you ever asked them where they've got it from, why they think they're going in a tunnel?

It's the scan in general I think, I know some of them are really really uptight - it's the thought of going in one. That's why I've composed a letter where I say there are no tunnels, if I'd known that I would have been quite happy coming, instead I got myself in a state.

I Mmmm, very interesting stuff that, OK, thank you very much indeed for your information, very much appreciated, what's powerful here to me is the fact that this is some 6 years ago and its still stuck in your mind.

Its still very strong in my mind, its left its mark really.

I Mmmmmmm thank you for being so honest and so open it really will help my research I'm sure.

22.Stories

22.Stories
21. Moulding Preconceptions

26.Memories

RAD8EXP

I. Could I ask you to outline your career history to date for me?

I trained at another hospital moved to several different hospitals, various grades and worked my way up really.

..works in ct/mr

I. Okay so what experience did you have of CT ?

Quite a bit it [my scan] was about 4-5 years after qualifying so ehm , I'd done quite a bit and I was also doing CT on-call as well.

I. So you certainly knew what to expect and what was going on, can you tell me then the story of your scan, perhaps starting off with what you were expecting to happen and what actually went on in the room?

Ehm basically I pulled my back and it was like 6 weeks after rest it still wasn't any better ehm so I saw a really good consultant and he gave me the option of CT or MRI. But I knew full well that I wouldn't be able to cope with an MRI, even though I was a radiation worker, CT was my only option to get myself through.

19. Isolation
23. Self
18.Symbolic Significance

I was expecting to lie there it wouldn't be that claustrophobic and that it would be quite okay. It was however quite a shock ((pause)) I was put on the table and the door slammed behind me and I could hear nothing, absolutely nothing going on apart from the machinery.

I. Mmm so what were you thinking about?

I felt as if everyone had gone away because I couldn't see the control panel or hear anything I thought I had been left on my own totally. The scanners don't start up straight away because you are putting in details and registering the patient, you have this huge gap when there is no noise, nothing going on at all. I was really worried that I had just been left there.

19. Isolation

I. Did you feel claustrophobic?

Well I am quite a claustrophobic person as it is, I was shut in a cupboard by my sister when I was little. So I suffer quite a bit in lifts and that kind of thing, but it .. even though it was an absolutely huge room for a CT scanner, it was absolutely massive, you felt you were really closed in , tightened down with the head band on you, knowing full well that I could move but I couldn't moveand I couldn't move, no matter how hard I tried, I literally couldn't do anything I just felt really tied. I mean not only could I not move, I couldn't say anything or I couldn't do anything.. it was awful as if I was paralysed.

26.Memories
4.feelings
23. Self
16.Control

I. Can you remember what your thoughts were at that time?

I can remember my exact thoughts it was along the lines of 'I have to get through this, I can't panic, I can't get out, this is going to be pathetic if I do, I am a radiographer for god's sake'. I put other people through it, they manage it so I have got to do it, I think that

23. Self

23. Self □ 57 thought actually got me through the scan, I don't remember a lot else.

18. Symbolic Significance □ 59 I. If I were now to show you a picture of a CT scanner, what would it represent, what would it symbolise to you? Work.

14. analogies □ 62 I. Is the whole experience of having a scan similar to, or analogous to anything that you can think of in life? ((long pause)) I cannot think of anything, It is so unique lying on a table and being led into a machine is very strange anyway and the fact that you are strapped down with bands around your head, I can't think of anything else that would be like that.

14. analogies □ 65 I. Okay,...

14. analogies □ 67 One image that comes to mind is 'death row in America', the image of the chap about to be executed and is strapped down unable to move, waiting for the inevitable to happen.

26. Memories □ 69 I. That's a powerful thought isn't it, how long ago did you have this scan? Ehm about 1996.....

31. So this has remained with you ever since..... ((nervous laugh)) they [other radiographers]] keep trying, they have research projects in MRI here and I keep thinking that I must pick up the courage to ask if I can go in, but I am not sure if it is a good idea at all.

21. Moulding Preconceptions □ 83 I. You mentioned before that you didn't think MRI was possible, why do you think that is? Ehm well my claustrophobia and from, well seeing it [MR scanner] I suppose. It's a massive tube and longer..... at least with CT and the wider bore you have more of a chance of seeing in and seeing out.

15. Communication □ 89 I. You mentioned the communication issues before when the staff shut the door etc, is that a big problem for patients do you think? I think it is, yes, with PET (Positron Emission Tomography) the patient is in and out a lot, even though they look like CT scanners the patient is in and out and you can chat to them. This isn't so much of a problem, with CT because you are not allowed in there because of the danger it is very isolating and the fact that there are these huge massive doors means that they shut behind you ...you are on your own. We have like a like a maze door way so that it is not in direct line with any radiation where you don't actually have to shut a door, I think that is a much nicer approach because you don't hear the door slam behind you. Also you can still hear the hum-drum of people chatting away and walking down the corridor this means that you don't feel so isolated.

11. recommendations □ 97

25. Technological association □ 98

15. Communication □ 107 I. That is interesting, I haven't come across that before, it is a bit similar to the old fashioned

15.Communication

109 **darkrooms. So does it feel like the patient is still with you then?**

110 Yes, but you do have to watch what you say, you can't
111 chat around in the control room and have a real laugh and
112 a giggle because the patient can hear you, they are
113 almost part of your conversation they don't hear what you
114 are talking about exactly since it is not loud enough but
115 they can hear the tone of the general chit- chat going
116 on. But at least they know that there are still quite a
117 few people around looking after them.

21. Moulding Preconceptions
27.Compliance
22.Stories

118 **I. So what do you think it is like for a patient to have a scan, working in CT yourself have you come across many misconceptions?**

119 Ehm I've seen a couple yes, one was a psychiatric
120 patient, who had real problems with it not being able to
121 lie down and would not accept the immobilisation band
122 because it was the restraint aspect of it I suppose.
123 Most people know if they are claustrophobic to start off,
124 with PET we have a similar problem. If they think they
125 are going to be claustrophobic the chances are they will
126 be because they have built themselves up and no matter
127 what you say it will not make any difference so
128 they[patients] have this preconceived idea at the
129 beginning that they will not be able to achieve it. As a
130 patient you want to be able to achieve it but you know
131 that you're not going to be able to achieve it, you know.

26.Memories

132 **I.I was very interested in your comment about being stuck in the cupboard when you were much younger, did that thought come to mind lying in the scanner?**

133 Yes, It did actually my sister locked me in a wardrobe in
134 a caravan and I was in there most of the day. My parents
135 were outside trying to find me and it [the scan] brought
136 that back and I can still remember sitting in the
137 wardrobe and what it was like in some vivid detail as
138 well, and the caravan has been gone almost 20 years now,
139 and lying on that scanning table brought that back.

26.Memories
19. Isolation

140 **I. Upto that point had you thought about it much?**

141 No not really, it is obviously there because as a child
142 you remember that nobody knew where you were and I was
143 left on my own kind of thing. It felt like hours I know
144 it was only an afternoon and I know it was getting dark
145 when they found me as such, so yeah it could have been
146 half an hour at most but as a child you thing it is ages,
147 and that was also the feeling that I got when I was on
148 the scanner. You know that I had been left alone and it
149 felt like ages, it was probably minutes while things were
150 being set up waiting to scan.

23. Self

151 **I.Mmm.....so did you feel that you lost track of time during the scan?**

152 Yes, totally

153 **I.Did you think of any other experiences?**

154 No not that I can remember.

5.information

155 **I. Patients come along for these scans and many of them have misconceptions about what is going to happen, have you come across many of these in CT?**

156 Ehm not too many really because the consultants have been
157 very good at explaining what is going to happen to you .

5.Information	□	<p>If everything is explained fully then people know what they are letting themselves into.</p>
23. Self	□	<p>I. Yes that is a good point, you don't work in MR? If I can't do it myself then I can't put someone through it, we have been asked if we would consider taking on some more MR scans, and I am not sure whether we can make somebody do it if they don't want to do it.</p>
25. Technological association	□	<p>I.You used the phrase 'putting them through it' what do you mean by that? The tying down and claustrophobia and connecting them to the machine. We have had a couple here who have managed the PET scans but then were unable to have the MR afterwards. That was a real disappointment to them because they got through part of the research which is the reason they have come and then not being able to complete the whole study.</p>
21. Moulding Preconceptions	□	<p>I.Do you think many of them are influenced by what other people tell them? No not really, many of them come with open minds here because not many know what a PET scanner is so they don't know and think it is MR anyway.</p>
17.Coping Strategies	□	<p>I. Finally, if I could ask you, if you needed to have another MR scan, what would you do, how would you feel about that? Depending on what part of me it was.....I would((long pause)) I would actually get someone to come in and sit with me, if it was a long scan I don't think that I would be able to lie there and not feel absolutely horrendous. I would possibly try and find a unit where, I don't know if anyone has designed such a unit yet, but where the doors are n't closed on you and you can hear what's going on in the background. I have been on PET scanner here, not for long and not for a real scan, but you can hear people in the background and that is such a great help when you are lying there, you know that people are within a yelling distance. I mean I didn't find the panic button much of a comfort, it's hearing people around.</p>
19. Isolation 2.concerns	□	<p>I. So the isolation element is very strong in your mind? Yes, I didn't expect ...I knew I was claustrophobic in tight places and things like that but I still didn't expect to feel the way that I did lying on the scanner. When I was on the PET scanner, I didn't like it, but because I could hear everyone else around It was okay and I didn't have that same horrible feeling that I had in the CT.</p>
15.Communication 20. Perceptions of the radiographers	□	<p>I. As a radiographer how do you communicate with the patient, do you do anything different? I am in and out all the time, if I see that they [patient] are looking lonely or their face changes or they are looking a bit anxious, I am in and checking on them to let them know that I am checking on them really. If I am in the control room on my own I will make sure that I walk in and out and they know where I am, I am in and out more often. I mean I will actually make noise, does that make any sense? I am anything but quiet because the scan is going on, I'll make the noise so that they know there are people around keeping an eye on them.</p>

15.Communication

223 **I. So you are making the noise to let them know that you**
 224 **are there ?**
 225 Yeah, I think it does get them through the scans because
 226 they are 1.5-2 hours some of them. That is a long time
 227 to lie there if you don't know that anyone else is
 228 around. Once you are flat on the scanner you cannot see
 229 anything.

11.recommendations
23. Self

230 **I. Okay, I think that is all the information I need,**
 231 **thank you very much for your honesty.**
 232 Everyone should experience this for themselves and it
 233 helps when I tell the patients that I have been through
 234 it myself [self-disclosure] and understand what they are
 235 going through. You know to tell them that I know what it
 236 is like for them and I will not leave them. I use this
 237 to help people if they need it.

Appendix 8

Summary of Phase 1 Computed Tomography Interviews (Codes 1-9)

Code	1 st Scan	Concerns	Expectations	Feelings	Information	Knowledge	Misconceptions	No. Problems	Other Radiology
CTMALE1	✓	Few	Tunnel	Philosophical approach	None	Poor	None	Very easy	X-rays
CTMALE2	3 rd	Given no information	Big polo	Fine	None	Some idea	Cancer scanner	Happy	Other CT
CTMALE3	✓	Few	Gave medical details	Glad to get it done	Requested verbal	Cross-sectional	Ultrasound	Happy	Ultrasound
CTMALE4	Unsure	Equipment would collapse	Claustrophobia	Frightened	None	Pictures	Hit his head	Many problems	Unsure
CTMALE5	5 th	For others	Sectional camera	Bit apprehensive	None	Ultrasound or microwaves	Radium injection	Happy	Other
CTMALE6	2 nd	Few	Unsure	Scared	None	Little	None	Many problems	Other CT
CTMALE7	✓	Claustrophobia	Something different	Worried	Receptionist	Little	Larger bore or ECG	Many problems	Barium meal
CTFEM1	2 nd	Contrast agents	MR scan	Not worried	None	Good	Would be trapped inside tunnel	Happy	Other CT
CTFEM2	✓	Told will get claustrophobic	MR scan	Quite alright	Little (verbal)	Not asked	Big tunnel	Happy	X-rays
CTFEM3	✓	Family had problems	Same as family	A little worried	None	Very good	Claustrophobic	Medical outcome	None
CTFEM4	2 nd	Few	Knew what to expect	Hope she was breathing correctly	Little (previous)	Excellent	None	Happy	Barium enema
CTFEM5	✓	None	Same as family	Very comfortable	Verbal (polo mint)	Good	None	Happy	None
CTFEM6	✓	None	MR as on TV	Relaxed	Pictorial	Radioactive	Tunnel	Empathy for others	Not asked
CTFEM7	2 nd	Medical condition	Not sure	Emotional	Medical	X-ray	Tunnel	Medical outcome	X-rays

Summary of Phase 1 Computed Tomography Interviews (Codes 10-14)

Code	Reaction in Scanner	Recommendations	Satisfaction	Explanation	Analogies
CTMALE1	Very pleasant	None	Yes	Not asked	None
CTMALE2	Compliance and calm	Keep your eyes shut	Yes	'Piece of cake'	None
CTMALE3	Nothing nasty	Not asked	Yes	Not painful	None
CTMALE4	Thought he might have a heart attack	Talk before scan	No	Not as bad as it looks	None
CTMALE5	No worries	Not relevant	Yes	Encouraging	None
CTMALE6	Hated it	More information	No	Not to worry	None
CTMALE7	Failed examination/fear	Tour beforehand	No	If claustrophobic -- not to come	None
CTFEM1	Satisfied	None	Yes	Not asked	None
CTFEM2	Enjoyed	Straightforward	Yes	Not to worry	None
CTFEM3	No concerns	Painless	Yes	Shut eyes	None
CTFEM4	Compliance	Not relevant	Yes	Very detailed (nurse)	None
CTFEM5	No worries	Someone to talk to or something to hold	Yes	Not to worry	None
CTFEM6	Fascination	Inform family members	Yes	Explain at different levels	None
CTFEM7	Isolated	None	Yes	Not asked	Asked but not answered

Summary of Phase 1 Magnetic Resonance Interviews (Codes 1-14)

Code	1 st Scan	Concerns	Expectations	Feelings	Information	Knowledge	Misconceptions	No. Problems	Other Radiology
MRFEM1	✓	Too close	Didn't know	Fearful	None	Good	None	Many issues	CT and X-ray
MRFEM2	✓	None	TV/media	Relaxed	Leaflet	Ultrasound	Technology	No problems	Not asked
MRMALE1	✓	Claustrophobia	Narrow tunnel	Trapped	Others	Good	Others' info.	Few	Not known
MRMALE2	✓	Few	Tunnel	Claustrophobic	None	Poor	Others' info.	Few	Not known
MRFEM3	2 nd	Few	Same as mobile	Relaxed	Isolated	Good	None	Few	Previous MR
MRFEM4	✓	Noisy	Big drum	Fine	Medical	High level	None	Few	Not asked
MRFEM5	✓	Few	TV/media	Fine	In department	Poor	Technology	Few	Not asked
MRFEM6	✓	Few	As her family	Comfortable	Leaflet	Good	None	No problems	X-rays
MRFEM7	✓	Few	Long cylinder	Nervous	Leaflet	Reasonable	Technology	Few	X-rays
MRFEM8	3 rd	Entering head first	Same as mobile	Hot	Leaflet	Poor	None	Few	Not asked
MRFEM9	✓	Others' stories	Closed	Fear	Leaflet and others	Poor	Others' stories	Few	Not asked

Code	Reaction in Scanner	Recommendations	Satisfaction	Explanation	Analogies
MRFEM1	Failed exam	None	No	Not asked	None
MRFEM2	Relax	None	Very satisfied	Straightforward	Womb with back seat
MRMALE1	Panic	Bigger	No	Average size no concern	Tomb
MRMALE2	Claustrophobic	Bigger and quieter	Reasonable	Reassure	Unique and heartbeat
MRFEM3	Closing eyes	Illustration of scanner	Yes	Reassurance	None
MRFEM4	In control	Illustration of scanner	Yes	Close eyes	Coffin, Stargate
MRFEM5	Fearful	None	Yes	Lying on a sun-bed	Did not agree
MRFEM6	Comfortable	Illustration of scanner	Very	Relax	Ship
MRFEM7	Nervous	Not to enter head first	Yes	Scary	Huge heartbeat
MRFEM8	Hot	More time orientate	Yes	Accurate	Woodpeckers
MRFEM9	Worried	Reduce noise and human contact	No	Can cope with emergency button	None

Appendix 9

Summary of Phase 2 Computed Tomography Interviews (Codes 1-10)

Code	1 st Scan	Concerns	Expectations	Feelings	Information	Knowledge	Misconceptions	Other Radiology	Reaction in Scanner
CTFEM8(2)	√	Dreading black hole	Shut in dark hole	Initial fear	None	May use x-rays	Closed in	?MR	Do as instructed
CTFEM9(2A)	2 nd	Few	Conveyor belt process	Not worried	Information leaflet	Radio something	Go in one end come out the other	Uncomfortable sinuses x-rays	No specific comment
CTFEM10(2A)	√	Rectal contrast leaking	Same as husband	okay	Husband	Something is moving	Machine coming towards self	Not asked	No specific comment
CTFEM11(2A)	√	None	Same as scan	As expected	None but a nurse	No idea	None	Uncomfortable sinuses	No specific comment
CTFEM12(2)	√	Other radiology	Same as husband	Not thinking about it	Not asked	Slices and 3D imaging	None	Barium enema absolutely awful	Sing hymns
CTMALE8(2)	?2 nd	confused	Unsure	How long will it be	Not asked	No need to know	None	Ultrasound straightforward	No specific comment
CTMALE9(2)	√	What was happening	Normal x-rays	Closed in	None	Probably x-rays	Camera with flashes	Fine	No specific comment
CTMALE10(2A)	√	Awkward position	Something totally different	Is something else going to appear	Going for a scan	Sections inside you	None	No problems	No specific comment
CTMALE11(2A)	2 nd	Heat	Ultrasound	Blanking out mind	They think I understand, I've had one before	Different positions	Produces a large photograph	CT and MR No big problem	No specific comment
CTMALE12(2A)	√	Complying with instructions	Rotating thing with body stuck inside	Okay	Presumably they knew	Computer digitised images	None	x-rays and ultrasound - fine	No specific comment
CTMALE13(2A)	√	cold	Same as scan but not i.v injection	cold	None	Scans body with lasers	None	x-rays	No specific comment

Summary of Phase 2 Computed Tomography Interviews (Codes 11-19)

Code	Recommendations	Satisfaction	Explanation	Analogies	Communication	Control	Coping Strategies	Symbolic Significance	Isolation
CTFEM8(2)	Would not make any difference	Was all right	Lie still	Fear of flying	Doctor did not explain scan	None	Tablets	Closed in	No
CTFEM9(2A)	Cannot improve	Fine	Get on with it	None	Could not see	None	None	Washer, not scared	Did not know where radiographers were
CTFEM10(2A)	Cannot improve	Wonderful	Do not worry	None	Radiographer felt sorry for me	None	Touch	Porthole	No
CTFEM11(2A)	Human contact	Not mentioned	Whole body goes through	Normal x-ray	Radiographers looking at screen	None	None	Round hole, from media	No
CTFEM12(2)	Information to say it is quick and no side effects	Don't have to worry	Everything explained	Dentist	Unsure where staff had gone	By using coping strategy	Counting	Toilet	Could not see
CTMALE8(2)	Cannot improve	Well treated	It will be noisy don't worry	None	Confused	None	Shut eyes	Round hole	No
CTMALE9(2)	More advice before especially females	Preferred this scan	Lie down	Unique	None of note	None	None	Shock and uncertainty	No
CTMALE10(2A)	More explanation before	Satisfied	Keep still	None	Someone to explain	None	Focussed on complying	Scan	No
CTMALE11(2A)	Cannot improve	No problems	Body placed into a machine	None	Use of microphone	None	None	Circular	No
CTMALE12(2A)	Cannot improve	Easy enough	Like an x-ray	Star Trek	None of note	None	None	Washing machine, media influence	No
CTMALE13(2A)	Cannot improve	Impersonal	Travel through a big machine	Normal x-ray	Use of automatic speaker	None	Shut eyes	Toilet seat	Being alone

Summary of Phase 2 Computed Tomography Interviews (Codes 20-27)

Code	Perceptions of Radiographers	Moulding Preconceptions	Stories	Self	Orientation	Technological Association	Memories	Compliance
CTFEM8(2)	Clear explanation	Media	None	Resignation	None	None	None	Do as told
CTFEM9(2A)	Good but left alone	Doctor	None	Physical	None	None	None	Struggled to keep still
CTFEM10(2A)	empathy for patient	Husband	There is nothing to it	Physical	None	Wonderful technology	None	None
CTFEM11(2A)	Good but actions not clear	Media and Toys	None	Questioning	None	None	None	None
CTFEM12(2)	Good but left room	Husband	None	Physical barium enema	None	Other radiology equipment	Dentist	None
CTMALE8(2)	Very good	None	None	Personal	None	Acceptance of technology	Warfare trauma	None
CTMALE9(2)	Good	Doctor	None	Physical	Whole body into hole	Fascination	None	None
CTMALE10(2A)	Excellent	Other scans	None	Resignation	Awkward position	Something else was going to appear	None	Painful but has to be done
CTMALE11(2A)	Good	None	None	Questioning	None	Body placed into that machine	None	None
CTMALE12(2A)	Good	Media	None	Resignation	None	Advanced medicine	Science fiction as a child	Do best to help
CTMALE13(2A)	Loss of human contact	None	None	Physical	None	Computer	None	Followed instructions

Summary of Phase 2 Magnetic Resonance Interviews (Codes 1-10)

Code	1 st Scan	Concerns	Expectations	Feelings	Information	Knowledge	Misconceptions	Other Radiology	Reaction in Scanner
MRMALE3(2A)	√	Wanted to get out	Someone in the room	Trapped	Another patient	No idea	Coming for an x-ray	No problems	No specific comment
MRMALE4(2A)	√	Radiotherapy head mask	CT scan	Closed in with previous scans	Information leaflet	Pictures of x-ray films	Sitting up for scan	Radiotherapy-traumatic	Freaked out
MRMALE5(2A)	√	Noise	Great big hole	Expectation of Claustrophobia	Information leaflet and others	Not x-rays since no protective clothing	Few	Barium enema - undignified	No specific comment
MRMALE6(2A)	√	Noise	Closed in	Empathy	Receptionist	Not known but not x-rays	None	Fine	No specific comment
MRMALE7(2A)	3 rd	Few	x-rays	Like being in jail	Not asked	Not know	x-ray/ultrasound	Other MR	No specific comment
MRMALE8(2A)	4 th	Noise	As previous MR but not injection	Bit claustrophobic	Information leaflet	Magnetic image	None	Other MR and CT	No specific comment
MRMALE9(2A)	√	Stories	Traumatic tunnel	Apprehensive	Forms but no information	Not asked	Stories	Not asked	No specific comment
MRMALE10(2)	4 th	Wanted to get out/ petrified	Same as previous	Fear of being buried alive	Information leaflet of no value	Takes x-ray pictures as it goes around	x-rays	Angiogram - scary	Physically scared
MRMALE11(2)	3 rd	Other radiology	Same as previous	Thankful for technology	Information leaflet	Laser imaging x-rays?	x-rays	Myelograms	No specific comment
MRMALE12(2)	√	Would be entombed	To be entombed	Fine	Information leaflet	Magnetic pulses and resonates	Entombed	Fine	No specific comment
MRFEM10(2A)	2 nd	Few	Similar to an x-ray	Fine	Doctor	Magnetic fields	x-rays	Fine	No specific comment
MRFEM11(2A)	√	Few	Ultrasound	Safe	Information leaflet of no value	Pulsing magnetic force	Ultrasound	Ultrasound	No specific comment
MRFEM12(2A)	√	Terrified beforehand	Stories of claustrophobia	Worried	Stories	Pictures of the brain	Stories	CT	No specific comment

Summary of Phase 2 Magnetic Resonance Interviews (Codes 11- 19)

Code	Recommendations	Satisfaction	Explanation	Analogies	Communication	Control	Coping Strategies	Symbolic Significance	Isolation
MRMALE3(2A)	Film or photograph to look at in scanner	Not mentioned	Gun going off	Fairground plane /being in space	Surprised to have this scan	Emergency button	Emergency button	Washing machine	Left alone
MRMALE4(2A)	Talk during scan	Happy enough	Not to worry	washing machine	None of note	Learn-previous scans	Counting	Scan	Can glimpse radiographers
MRMALE5(2A)	Technical details on leaflet	Concerns but satisfied	Not to worry	Pot holing	Was not explained	None	Emergency button	Big hole	No problem
MRMALE6(2A)	None	As expected	Nothing you can do	Unique	Assumed he was in contact	Relax	Emergency button	Underground	Not concerned
MRMALE7(2A)	Television while in scanner	The staff have been brilliant	Analogy of washing machine	About to jump out of a plane	No conversation	None	Eyes closed	Brain scan	Isolated
MRMALE8(2A)	None	Except for injection	Reassuring staff	Unique	Staff will talk you through	None	Emergency button	Front of washing machine	Not concerned
MRMALE9(2A)	Not asked	Very trusting	A bit frightening	Dentist	None of note	None	Eyes closed	Not asked	misconception
MRMALE10(2)	Human contact	Scan was better this time	Could not tell the truth	Unique	Total lack of communication	weeks before	Partner present	Scared-never looks	Felt alone
MRMALE11(2)	Keep it simply	Complemented technology	Relax	Pneumatic drill	None of note	None	Eyes closed	Air tight	No problems
MRMALE12(2)	None	Overall fine	Prepare yourself	Unique	Good	None	Eyes closed and music	Green	No problem
MRFEM10(2A)	More colourful room	Fine	Noisy but do not worry	Very different	Constant contact made	None	Human contact	Scan	Okay with verbal contact
MRFEM11(2A)	None	Reasonably	Depends on type of scan	Not asked	Good	Looked for escape route	Emergency buzzer	Coffin	Loss of contact
MRFEM12(2A)	Everyone is different	No	It is light/escape	Play-fighting	Being watched - reassurance	Loss of control	Eyes closed/sedation	tunnel	fearful

Summary of Phase 2 Magnetic Resonance Interviews (codes 19-27)

Code	Perception of Radiographers	Moulding Preconceptions	Stories	Self	Orientation	Technological Association	Memories	Compliance
MRMALE3(2A)	Good but left the room	Another patient	Scary tunnel	Physical	Loss of direction	Trapped in something tight	None	Concerned at moving
MRMALE4(2A)	Good but unsure of location	Few	None	Physical	None	Big one (CT)	Radiotherapy scan	None
MRMALE5(2A)	Good	Others	Unpleasant experience	Physical/questioning	Facing upwards	Great big hole	None	None
MRMALE6(2A)	Poor	Receptionist/TV	None	All categories	None	Threatening	None	Concerned at moving
MRMALE7(2A)	Excellent	None	None	Questioning/special	None	Relief	None	None
MRMALE8(2A)	Brilliant	Others and TV	None	Questioning	None	Tube	None	None
MRMALE9(2A)	Good	Others/Family	Very traumatic tunnel	Physical/special	None	None	Dentist	None
MRMALE10(2)	Good but lack of communication	Media/other patients	Claustrophobic/other radiology	Physical/spacial	Never looks at scanner	Total anxiety with technology	None	Could not risk repeating
MRMALE11(2)	Very good	Others/TV	None	None	None	None	None	None
MRMALE12(2)	Very comforting	Others/TV	Claustrophobic	Physical	None	None	None	None
MRFEM10(2A)	Very good	Previous scan	Reassured another patient	Questioning	None	Small tunnel part	None	None
MRFEM11(2A)	Loss of contact	None	None	Physical	Did not look behind	Animate terms	None	Relaxed and get done
MRFEM12(2A)	Very understanding	Stories	Terrified before coming	Physical/resigned	None	Fear/animate terms	None	None

Appendix 10

Summary of Radiographers' Experiences Codes

Code	1 st Scan	Experience of CT/MR	Concerns	Expectations	Feelings	Information	Misconceptions	Other Radiology
Radexp 1	2 nd	Yes	Claustrophobia	Similar to CT	Terrified	None	Patients: CT and MR were the same	Bariums and Cardiology
Radexp 2	2 nd	Yes	Length of procedure	Same as last MR scan	Nervous towards the end	None	None	None
Radexp 3	Yes	No	Could not get out	As media influence	Panic	None	None	Angiography and radiotherapy
Radexp 4	2 nd	yes	Unexpected emotions	Straightforward scan	Wanted to escape	None	Patients: what scanner does	Bariums and Cardiology
Radexp 5	Yes	CT only	Loud noise	Similar to her mother's scan	Panic	Details caused concern	None	Breast Screening
Radexp 6	Yes	No	Claustrophobic for first time	As per media influence	Disorientated	Lack of information	Patients:noise	Patients' fear of the unknown for any examination
Radexp 7	Yes	No	Loss of personal identity	As per media influence	Wanted to cry	None	Patients: think all scans are tunnels	None
Radexp 8	Yes	CT only	fearful	Wouldn't be claustrophobic	Isolated	Patients: consultants explain details very well today	None	PET scans

Summary of Radiographers' Experiences Codes

Code	Recommendations	Satisfaction	Analogies	Communication	Control	Coping Strategies	Symbolic Significance	Isolation
Radexp1	'on the job training' for students	Little	Worst nightmare	Unable to communicate due to fear	Males did not admit to lack of control	Concentrate on keeping still	Long tunnel	Lack of communication
Radexp2	Adequate preparation	Content	Caving	Radiographers are at the end of the buzzer	Would call if needed	Buzzer	Technology	Patients: will be alone
Radexp3	Regular human contact	None	London Underground	Lack of communication	None	None	Claustrophobia	Totally alone
Radexp4	Regular human contact	Little	Unique	Non-active human contact (nurse)	Grim and bear it	Fear of looking stupid	Imaging	Recognised for self and patients
Radexp 5	In contact with a human at all times	Little	Unique	Lack of communication	Trying to control panic	Convincing oneself they are okay	A big fat toilet roll	Could not see radiographers
Radexp 6	Pleasant environment, literature and regular contact	None	Worst test	Cannot locate staff in window	Slightly disorientated	Counting pulses and therapeutic touch	Tunnel	Could not see radiographers
Radexp7	Regular human contact	Little	Being inside a coffin	Lack of contact	Strange emotions questioned control	Convincing oneself they are okay	Claustrophobia	Could not see radiographers
Radexp 8	Do use doors and maintain audible contact	Little	Death row	Must remain in contact	Froze with fear	Convincing oneself they are okay	Work	Severe isolation

Summary of Radiographers' Experiences Codes

Code	Perceptions of Radiographers	Moulding Preconceptions	Stories	Self	Orientation	Technological Association	Memories	Compliance
Radexp 1	No identity	None	Different procedures	Resigned and Professional	Encapsulated within scanner	Questioned if equipment was functioning	Locked in cupboard as child	Yes
Radexp 2	None	None	Influence of neighbours	Resigned, physical, and spacial	None	Impact of individuals is different	None	No problems
Radexp 3	Poor	None	None	Questioning, Resigned, and spacial	None	Daunting equipment can be tempered by human contact	None	Patients: not always easy to comply
Radexp 4	Reasonable impression	None	Networking negative stories	Resigned, physical, spacial and professional	Dizzy feeling	Physical size and close proximity of equipment	None	Yes
Radexp 5	Poor, disappeared without explanation	Patients: would attempt to allay fears	Would have contributed to negative networking Patients: horrible stories	Spacial and hid professional self	Had to adjust to the confined environment	Physical size of equipment impacts differently on individuals	None	If Patients disclose concerns better compliance is achieved
Radexp 6	Very poor, staff require particular qualities	Patients: would attempt to allay fears	Few	Questioning, resigned, physical, spacial, and professional	Had to adjust to the confined environment	Worst technological experience	None	Patients: gender split 50/50 but females more open
Radexp 7	Poor continuity	Few problems today	Patients: all scans involve tunnels	Questioning, resigned and professional	None	None	None	Patients: improved information leaflets
Radexp 8	Poor	Patients: have open minds	Few	Questioning, resigned, physical, and professional	None	Close association between technology and patient	Strong memories	Patients: all wish to comply

Appendix 11

Appendix 11 Patient Typologies

All concepts and discoveries are listed under the appropriate typology with some being identified with different typologies. Additional concepts derived from the radiographers' interviews are in italics and those concepts that conflict with existing ones are marked with a *

Amenable Patients	Authority of Instruction	Technological Agency	Humanistic Agency
Satisfied with scan	Pictorial representation	Media portrayal	Empathy
Praise for radiographers*	Informal communication	Maintaining control	Media influence
Good Level of knowledge	Self	Orientation	Varied sources of information
Relief when viewing scanner*	Influence of others	Claustrophobic*	Closing eyes
Submissive responses	Varied sources of information	Conveyor-belt technology	Claustrophobia
Desire to comply	Expected MR scan	Embarrassment in scanner	Conveyor belt process
Lay terms to express feeling	Expected a closed-in unit	Previous scans not always useful	Lay terms to express meaning
Maintaining control	Assumptions	Expected MR scan	Analogies to convey meaning
Coping strategies	Negative preconceptions	Expected closed-in unit	Male denial*
<i>Wider range of coping strategies</i>	<i>Analogies</i>	Closing eyes	Unique experience
<i>Human contact</i>	<i>Communication</i>	Barium enema	Barium enema
<i>Belief problems are now resolved</i>	<i>Descriptions rich and varied</i>	Isolation	Assumptions
	<i>Influence of media</i>	Human contact	Human contact
	<i>Particular type of staff</i>	Symbolic significance*	No identity for radiographers
		<i>Extreme fear of technology</i>	Self
		<i>Angiography and Radiotherapy</i>	Symbolic significance
		<i>Staff not visible</i>	<i>Networking</i>
		<i>Concerns over noise</i>	<i>Memories of traumatic events</i>
		<i>PET, bone densitometry, breast screening</i>	<i>Self disclosures</i>
		<i>Loss of privacy and dignity</i>	<i>Loss of continuity</i>
		<i>Orientation</i>	<i>Particular type of staff</i>
		<i>Familiarity may reduce anxieties</i>	<i>Vulnerable patients</i>
		<i>Complete automation</i>	<i>Mechanistic approach under pressure</i>

Appendix 12

Appendix 12 Radiographer Typologies

Non -Persons	Experiential learning	Tribal culture
Professional Identity	Self-disclosures	Regular human contact
Loss of continuity	Learnt from experiences	Novel methods of communicating
Lack of role models	Recalled events from many years	Unprofessional behaviour
Role appears simplistic	All radiographers to have scans	Range of communication strategies
Negative perceptions of others	Lack of role models	Local language
Term 'radiographer' not used	Visits to other departments	Limited apathy
Poor self-definition		Selective career development
		Increased deference
		Role reversal (same turf)
		Little autonomy