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DOCTOR OF PHILOSOPHY

Goal perceptions and their effects on commitment and affective responses to goals

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Award date:
2001

Awarding institution:
Bangor University

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GOAL PERCEPTIONS AND THEIR EFFECTS ON COMMITMENT AND AFFECTIVE RESPONSES TO GOALS

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July 2001
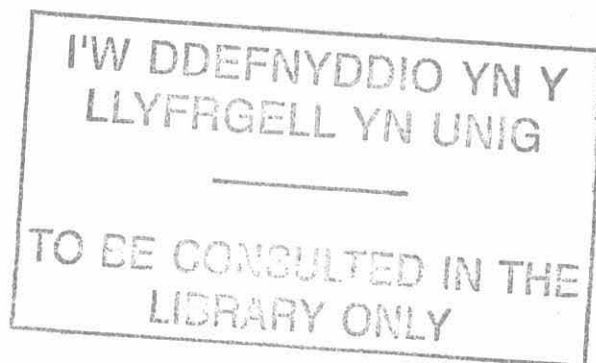
Thesis submitted to the University of Wales in fulfilment of the requirements of the Degree of Doctor of Philosophy at the University of Wales, Bangor.

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ACKNOWLEDGEMENTS

Although this thesis is all about goals I am constantly reminded of my habit of setting myself unrealistic goals. However, you have to have a dream. Achieving a PhD is one of my dreams. Another one of my dreams is to be a category one golfer, hence why the PhD possibly took longer than it should have. However, I would never have got this far without the help of some exceptional and wonderful people.

Firstly, a much belated thanks must go to my English teacher, Mr Brian Roach. He was instrumental both in my decision to return to education and my continued belief in myself.

Primarily my thanks go to my supervisor. Dr David Ingledew consistently set high standards and was patient with my attempts to meet them. Also my thanks to my chairman, Dr David Markland.

I could *never* have completed this programme without the support and kindness of my friends and colleagues within the department, with particular thanks to Nicky and Della for helping me cope with all the trials and tribulations of life. To Yvonne and Alissa who had to share an office with me and to Pat for all the chats (and cake).

Lastly, my heartfelt thanks go to my husband Jeremy and my brother Richard who love me despite my goals, and whom I love both dearly.

SUMMARY

Using a theoretical framework, the aim of this research was to examine the effects of workplace goal perceptions on commitment and affective responses. The positive effects of goals on performance have been well documented (see Locke and Latham, 1990). However, researchers have identified negative effects of goals on affective well-being and health (e.g., Emmons, 1992). The effectiveness of any goal derives from making a commitment to attain it (Schunk, 1991). Researchers (e.g., Hollenbeck & Klein, 1987) have specified value expectancy models that provide a framework for exploring the consequences and antecedents of goal commitment. However, a complete model should simultaneously consider the antecedents of not only goal commitment but also affects.

A generic, multi-dimensional, goal perceptions questionnaire (GPQ) was designed and piloted. In the pilot study and the main study (longitudinal) a sequential approach to confirmatory factor analysis was employed (Jöreskog, 1993). This entailed testing each of the 25 goal dimensions one at a time in single factor models and then pairing each of the scales in two factor models. Fits were generally good. However, the presence of positively and negatively worded items in a scale tended to detract from fit.

A model that considered the antecedents of goal commitment and affects was specified and tested using structural equation modelling. Critically, the results suggested that the proximal and distal determinants of positive and negative affects are different. Either value or success expectation can enhance commitment. However, value determines positive affect and success expectation determines negative affect. Moreover, the determinants of value and success expectation are different. Control was identified as a major determinant of success expectation, and origin was identified as a major determinant of value.

An intervention study was designed to explore the effects of an interview based on the principles of Motivational Interviewing (e.g., Rollnick, Mason, & Butler, 1999) on goal perceptions and goal achievement. There was no evidence to suggest that the interviews had any effect on goal perceptions or achievement levels when compared to a control group. However, overall, Success Expectation was related to subsequent goal achievement and Control perceptions were linked to performance. Control levels increased across both groups.

In conclusion, considerable progress has been made in designing and validating the GPQ. The results of the structural equation modelling were mostly consistent with the model. The intervention study provided initial evidence to suggest that key goal perceptions are changeable and linked goal perceptions with goal achievement. Theoretical and applied implications of this research are discussed.

CHAPTER 1

General Introduction

Overview of the Chapter

This chapter provides a structured introduction to the research. In this chapter, the author provides a rationale of why it is important to carry out this research and sets out the aims of the research. A working definition of a goal is provided, and the use of goals in organisations is discussed. The critical role of commitment for goal performance, along with models that detail the antecedents of commitment, is discussed. Previous research on the effects of goals on affective well-being and health is reviewed. The relevant mainstream psychological theories of motivation and behaviour that have directed the author are outlined. Lastly, the author provides an overview of the research and an outline of the thesis.

Aims of the Research

The setting of goals provides a performance standard to aim for that motivates and guides ongoing task performance. The positive effects of goals on performance have been well documented (see Locke & Latham, 1990). However, researchers have identified negative effects of goals on affective well-being and health and found, for example, associations between goals and high levels of anxiety (Ivancevich, 1982), psychological distress, depression, and physical illness (Emmons, 1992).

The effectiveness of any goal derives from making a commitment to attain it (Schunk, 1991). According to Locke, Latham, and Erez (1988), "it is virtually axiomatic that if there is no commitment to goals, then goal setting does not work" (p. 23). Researchers (e.g., Hollenbeck & Klein, 1987; Wofford, Goodwin, & Premack, 1992) have specified value expectancy models that provide a framework for

exploring the consequences and antecedents of goal commitment. However, a complete model should simultaneously consider the consequences and the antecedents of not only goal commitment but also affects.

The aim of this research is to examine the effects of goal perceptions on commitment and affective responses. This will initially involve the design and piloting of a questionnaire to measure goal perceptions. Models based on a theoretical framework will be specified and tested. The findings from the studies will then be used to design an intervention study.

What is a Goal?

Austin and Vancouver (1996) defined goals as "internal representations of desired states, where states are broadly construed as outcomes, events or processes" (p. 338). According to Austin and Vancouver (1996), goals can be analysed at physiological, functional, sociological, or ecological levels, within individual, dyad, group, or organisational systems. This research is concerned with the functional-individual level of analysis. At this level (according to Austin & Vancouver), goals can be considered from three perspectives: latent (goals not necessarily perceived consciously); phenomenological (goals as perceived by the individual him or herself) or external observer (goals as perceived by others). Although traditionally (in laboratory settings) goal attributes such as goal difficulty are assigned by an external observer, within health psychology it is individuals' perceptions that are increasingly considered important determinants of future behaviour and affect (Fiske & Taylor, 1991). Thus, in this research, a phenomenological perspective is adopted. That is to say, this research is concerned with individuals' perceptions of their goals.

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At the individual level there is a hierarchy of goals. There are higher order goals, beneath which are subgoals, which in turn have subgoals. Little (1989) categorises the differences in the type of goals that individuals set as magnificent obsessions versus trivial pursuits, although classification of someone's goals as the latter might be erroneous. Less parsimonious hierarchies have been explored and are reviewed by Austin and Vancouver (1996). Different levels of goals might have the same overall aim but the level of an individual's focus is different. For example, an individual's goal may be to sell so many widgets but if asked they may say that their goal is to make so many phone calls, visits, or other strategies, which will enable them to sell the requisite amount. Thus, some individuals may focus on the "how", rather than the "why", in other words, focus on the process rather than the outcome. This research is not primarily interested in levels of goals. However, Austin and Vancouver (1996) suggested that there was a need to develop taxonomies of goals to support theoretical development. Thus, in this research, an attempt will be made to categorise goals and the relationship between the goal categories and goal dimensions will be explored.

Goals in Organisations

According to a survey of 1331 organisations conducted by the Institute of Personnel Management (1992), goal setting systems had been introduced into 79 per cent of British organisations. The use of goals may be a conscious management strategy, for example, Management by Objectives (e.g., Armstrong & Dawson, 1989). Goals may be set within an appraisal system and provide a standard for performance assessment (Yearta, Maitlis, & Briner, 1995). Goal achievement may be linked to pay or bonuses, at an individual and/or team level. Even where there is no formal goal setting process it is likely that managers use goals as a method of directing individuals' efforts (Yearta et al., 1995). In addition, it is likely that individuals use goals to direct their own action and attention.

The use of goals in the workplace is widespread. However, much of the early research on the effectiveness of goal setting is based on experimental and laboratory studies (see Locke & Latham, 1990). According to Yearta et al. (1995), it cannot be assumed that the relationships found in laboratory or experimental studies will hold perfectly in an organisational context, a point that Locke and Latham (1990) have acknowledged. Yearta et al. suggested that it is crucial for organisational theorists and practitioners to increase their understanding of goal relationships in complex organisational contexts.

Goal Commitment

Goals do not influence behaviour when people do not commit themselves to attempting to attain them (Locke, Shaw, Saari, & Latham, 1981). Locke et al. (1988) defined goal commitment as "one's attachment to, or determination to reach a goal" (p. 24). According to Campion and Lord (1981), commitment implies the extension of effort, over time, toward the accomplishment of a goal and emphasises an unwillingness to abandon or to lower the goal. Tubbs (1993) and Wright, O'Leary-Kelly, Cortina, Klein, and Hollenbeck (1994) likened commitment to intention. Intention is a critical construct in Ajzen and Fishbein's (1977) Theory of Reasoned Action, wherein it is proposed that individuals' intention to perform a specific behaviour has a direct influence on behaviour.

Hollenbeck and Klein (1987) suggested that the differing goal difficulty effect sizes found in previous studies could be attributed to confounding or moderating effects of commitment or its antecedents. They suggested "given the central role of goal commitment in goal setting theory, this variable should always be measured, even when the goal commitment by goal difficulty interaction is not being tested. If hypothesised goal characteristics do not affect performance, a likely

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explanation is that there is a low level of commitment to the goal" (p. 219).

Allscheld and Cellar (1996) found that commitment had a direct effect on performance. A meta-analysis conducted by Wofford et al. (1992) found that goal commitment was significantly associated with goal achievement. A more recent meta-analysis conducted by Klein, Wesson, Hollenbeck, and Alge (1999) found that goal commitment had a strong positive effect on performance across studies, and that commitment moderated the goal difficulty-performance relationship. A number of studies have failed to support the impact of commitment on performance (e.g., Donavan & Radosevich, 1998; Dodd & Anderson, 1996). However, the weight of evidence suggests that goal setting does not work unless there is commitment, particularly if goals are difficult (Locke et al., 1988).

Commitment has also been found to moderate the relationship between goals and affects. Brunstein (1993) found that commitment moderated the extent to which differences in goal attainability accounted for changes in subjective well-being. He suggested that commitment determines the extent to which an individual's subjective well-being is contingent on the pursuit of his or her personal goals. Therefore, if a person is not committed to their goal they are not adversely affected by perceived lack of progress towards its achievement.

Antecedents of Goal Commitment
A number of research papers have explored the factors that inhibit and promote goal commitment. Hollenbeck and Klein (1987) proposed an expectancy theory model of the antecedents and consequences of goal commitment (see Figure 1).

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Figure 1. Hollenbeck and Klein's (1987) expectancy theory model of the antecedents and consequences of goal commitment.

Situational factors	Personal factors	Situational factors	Personal factors
Publicness	Need for Achievement	Social influence: others' goals, goal commitment, or performance	Ability
Volition	Endurance		
Explicitness	Type A Personality	Task complexity	Past success
Reward Structures	Organizational Commitment	Performance constraints	Self-esteem
Competition	Job involvement	Supervisor supportiveness	Locus of control

Attractiveness of Goal Attainment   Expectancy of Goal Attainment

Goal Commitment

Goal Level → Task Performance

Hollenbeck and Klein proposed that the main antecedents of commitment are the 'attractiveness of goal attainment' and the 'expectancy of goal attainment'. The antecedents of attractiveness of goal attainment and the expectancy of goal attainment are divided into two factors: situational factors and personal factors. Situational factors that affect the attractiveness of goal attainment are publicness, volition, explicitness, reward structures, and competition. Personal factors that affect the attractiveness of goal attainment are need for

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achievement, endurance, Type A personality, organizational commitment, and job involvement. Situational factors that affect the expectancy of goal attainment are social influence; others' goals, goal commitment, or performance; task complexity, performance constraints; and supervisor supportiveness. Personal factors that affect expectancy of goal attainment are ability, past success, self-esteem, and locus of control.

Hollenbeck and Klein's model was followed with one by Locke et al. (1988) that was updated by Locke and Latham (1990). This model was organised in a similar way to Hollenbeck and Klein's model, using expectancy theory categories. However, Locke and Latham did not distinguish between personal and situational factors as they considered that all external factors are cognitively processed and therefore have an internal aspect. Locke and Latham included many of the same factors as Hollenbeck and Klein's model, such as publicness, self-efficacy, and competition, but perhaps one of the major differences between these two models is that Locke and Latham emphasised the importance of managers and supervisors in affecting commitment to goals. They suggested that this emphasis on the legitimacy, personality, and the presence of the authority figure is important but probably more so when goals are assigned.

According to Locke and Latham (1990), assigned goals are often viewed by social scientists as almost axiomatically ineffective, if not immoral. However, Locke and Latham considered that assigned goals are effective given certain circumstances. Although Locke and Latham did not include in their model factors such as participation and choice, they did discuss in detail the empirical evidence that explores the effectiveness of the different ways in which goals are set. They suggested that behavioural theories such as McGregor's (1960) Y Theory, that suggested that individuals are self-directing, may be contradictory to social realities in some parts of the world, and that

the human relations movement is viewed as naïve in other parts of the world. They suggested that behavioural scientists in North America are perhaps not wrong in overestimating the power of choice and participation in fostering commitment but possibly erroneous in underestimating the effect of a supportive leadership style and authority on commitment. Their model and its emphasis on the effects of an authority figure reflects their belief that telling people what to do does not necessarily preclude providing a nurturing atmosphere and that a manager/supervisor plays an important role in fostering goal commitment.

Wofford et al. (1992) integrated Hollenbeck and Klein's, and Locke and Latham's models along with other research findings and conducted a meta-analysis to explore the proposed relationships. Like Hollenbeck and Klein's model, Wofford et al.'s model differentiated between situational factors such as task complexity and difficulty, and personal factors such as ability and self-efficacy. Wofford et al.'s model is also a value-expectancy model in design, with value and expectancy mediating the effects of the situational and personal factors on commitment. However, they do not propose which personal or which situational factors will affect expectancy and which will affect value. This distinction between the antecedents of expectancy and those of value might prove to be important.

Goals and Well-Being
From the research on stress and particular stress in the workplace, it is recognised that the nature of the environments within which work related activities take place strongly influences not only the quality of work life, work performance, and safety, but also general health (Cox & Ferguson, 1994). Work can enhance, promote, and sustain an individual's health and well-being, or it can have a negative effect leading to illness and disease (Marsella, 1994). According to Marsella (1994), the challenges that arise from work can become a

source of serious medical and mental illness, or have a positive effect on well-being. Goals are very specific challenges that are often linked to individuals' appraisal, promotion, remuneration, or even job security. Thus, goals are potentially a highly specific cause of stress within the workplace. If jobs can be redesigned to reduce the risk of stress related illness and increase aspects of productivity associated with creativity, skill development, and quality (Karasek & Theorell, 1990), it should be possible to redesign a goal to the same end.

What is it about a goal that may cause negative affective responses? Carver and Scheier (1990) proposed that emotions are intrinsically related to goal values, and that they reflect differences between expected and experienced rates of movement toward (or away from) those goals. This proposal has been regularly supported by empirical research. For example, Emmons and Diener (1986) found that positive affect was related to the attainment of important goals and negative affect was related to a lack of goal attainment. Saavedra and Earley (1991) found that individuals who received positive rate-of-progress feedback experienced greater positive (and lower negative affect) than individuals who received negative rate-of-progress feedback. Wheeler, Munz, and Jain (1990) found that those individuals who were making progress towards their goal and were more committed had higher levels of overall well-being compared to those who were less committed and felt they were not making progress towards their goal.

A number of researchers have used a value expectancy perspective. For example, Emmons (1986) found that positive affect was associated with striving value and negative affect associated with a lack of probability of success. Brunstein (1993) found that goal commitment moderated the extent to which differences in goal attainability accounted for changes in subjective well-being. Subjects with both high levels of goal commitment and goal attainability

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displayed positive changes in well-being. Well-being was impaired in subjects with high commitment but who scored low on a goal attainability measure.

Researchers have also looked at the effects of other goal dimensions on affects. For example, Emmons (1986) explored the effects of goal conflict and ambivalence, and found that these two dimensions were also associated with negative affect. Emmons and King (1988) found that goal conflict and ambivalence were associated with high levels of negative affect, depression, neuroticism, and psychosomatic complaints. Lee, Bobko, Earley, and Locke (1991) found significant associations between goal conflict and goal stress and reports of somatic complaints and anxiety/insomnia. Ruehlman and Wolchik (1988) found that project support was related to well-being, but not to distress, whilst project hindrance was related to both distress and well-being.

Background Theories

One of the first tasks in designing the goal perceptions questionnaire was to identify putative goal dimensions that may influence goal commitment and affective response to goals. To do this, the author referred to mainstream psychological and behavioural theories and those theories that have primarily directed the authors thinking are briefly outlined below.

Control Theory

Neobehaviourist and cybernetic theories such as control theory liken human behaviour to a computer. However, according to Klein (1991a), the continued use of mechanistic analogies when describing human behaviour seems to undermine the usefulness of control theory for explaining human behaviour. Although control theory is not grounded in research, Klein (1991) suggested that it provides a

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framework that can be used in many psychological theories to explain behaviour and to generate research.

At the heart of control theory is Miller, Galanter, and Pribram's (1960) TOTE (Test-Operate-Test-Exit) model. It is proposed that an input is detected by a sensor, is fed into a comparator that compares the input with a reference standard (a goal), and if there is a deviation then a signal is sent to an effector that generates modified output. Klein (1991) suggested that the feedback loop uses feedback to reduce discrepancies and to ensure the attainment of valued outcomes.

The control loop as well as taking current behaviour feedback, may also run stored knowledge of previous attempts, similar situations, and attributions made for previous success or failure to anticipate the success or otherwise of a particular course of action (Hyland, 1988). The reference criterion is an internal standard against which comparisons are made (Hyland, 1988). This reference criterion compares more than end states (that have typically been identified as goals), but includes ongoing comparisons (progress) and reflects the richness and wide ranging selection of goals that people have. For example, goals could include attempts to be a nicer person or self-actualisation. Importantly, control theory recognises that individuals have more than one goal and that these goals form a hierarchical structure that is flexible, moving a particular goal on and off the number one spot, and that a particular goal may cause conflict with other goal(s) or values.

Hyland (1988) suggested that the greater the value of the goal the greater the increase of error sensitivity (greater vigilance and discrepancy awareness), with behaviour being contingent on the amount of error sensitivity. He suggested that detected error, apart from generating behaviour, has emotional consequences. A change in emotional states activates an emotion control loop. Returning one's emotional state to its homeostasis might then become more salient then achieving a particular goal. For example, a goal to lose weight

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may be abandoned with the first hunger pangs, when it is suggested that returning one's emotional state to its homeostasis becomes more salient than achieving ones goal. Increasing effort to achieve the goal or perhaps abandoning that goal might achieve this return to normal emotional state.

Goal Theory

Locke and Latham (1990) propose a theory that is also essentially based on the TOTE model but their theory specifically relates to how goals activate behaviour rather than just how behaviour per se is activated. It is proposed that when first presented with a goal an individual activates their stored universal plans (SUPs) and makes an assessment about which ones are required in order to achieve the goal. An individual also has access to stored task specific plans (STSPs), which refer to previous tasks learnt through modelling, practice, or instruction that can be related to the present task. The next step involves a self-efficacy assessment. If self-efficacy is low this will generate development of new task specific plans (NTSPs). With reference to SUPs and NTSPs an individual will develop task specific plans (TSPs), which will need to be tested. Feedback from activation of these TSPs will lead to continued or amended behaviour. Continuing on the same track may produce the desired outcomes or it might be necessary in the course of time to amend TSPs resulting in the individual going through the whole process again in order to develop new TSPs. The idea that feedback is not only received as a result of actual performance but also through SUPs and STSPs makes goal theory more sophisticated than the early TOTE models.

Value-Expectancy Theories

Vroom's (1964) value-expectancy theory proposes that the force toward a given choice of action is the product of three factors: an individual's belief that exerting effort will produce a certain level of performance (expectancy); the belief that such performance will result

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in certain outcomes (instrumentality); and the value (valence) of the those outcomes. The greater the belief the goal will be attained, and the higher the value of the goal, the greater the motivational tendency to engage in that behaviour (Weiner, 1992).

Other theories that have been historically categorised as value-expectancy theories include social learning theories. Two of the major exponents of social learning theories are Bandura (e.g., 1997) and Rotter (1954).

Bandura's social cognitive theory holds that behaviour is determined by expectancies and incentives. Expectancy beliefs include expectancies about environmental cues (how events are connected), expectations about outcomes (what will be the result of any action taken), and expectations about self-efficacy (an assessment of "how well one can execute courses of action required to deal with prospective situations", Bandura (1982) (p. 122).

Bandura (1997) suggested that goals are chosen partly based on beliefs of personal efficacy, and that the achievement of that goal is then affected by self-efficacy beliefs. Those who have high self-efficacy beliefs will endeavour to achieve their goals despite failures and obstacles; the more strongly individuals believe that they can meet challenging standards, the more they intensify their efforts. Conversely, those with low self-efficacy beliefs will reduce their efforts, lower their standards, or abandon their goals.

Rotter (1954) suggested that the potential for behaviour is a result of expectancy (outcome expectancy) and the value (an assessment of the need or desirability of a certain objective) of that outcome. An important dimension within Rotter's theory is "locus of control". Rotter proposed that individuals differ in the extent to which they perceive outcomes as caused by internal factors such as ability or

effort or external factors such as luck or powerful others. He suggested that individuals' control beliefs range from an internal locus of control (events are a consequence of one's own actions and thereby under personal control) to external locus of control (events are unrelated to one's own behaviours in certain situations and therefore beyond personal control).

Another theory that has been traditionally considered a value-expectancy theory is Ajzen and Fishbein's (1977) Theory of Reasoned Action. They suggested that individuals' intention to perform a specific behaviour has a direct relationship with actual behaviour, and that behavioural intention is influenced by attitude and normative beliefs. Attitude is the individual's positive or negative evaluation of performing a particular behaviour and is affected by beliefs about the consequences of performing the behaviour and the value that person places on those consequences. Normative beliefs are other people beliefs and the felt pressure and salience of that pressure. Ajzen (1988) suggested that people intend to engage in a particular behaviour when they think it is valuable and when they consider that significant others think they should perform it.

The Theory of Planned Behaviour (e.g. Ajzen, 1987; 1991; Ajzen & Madden, 1986) is an extension of the Theory of Reasoned Action that includes behavioural control beliefs as an antecedent of intention. According to Ajzen and Madden (1986), perceptions of behavioural control have an effect on intention, and insofar as perceived control reflects actual control, it is suggested that there will be a direct relationship between control and behaviour. Perceptions of control are influenced by internal factors such as perceptions of the availability of information, skills, and abilities needed to complete a task; external factors such as opportunities and resources available; and also a perception of to what extent successful completion of a task or goal relies on the actions of others, or the need to work with

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others. Ajzen (1988) suggested that individuals who perceive they have neither the opportunities nor resources to perform a behaviour are unlikely to form strong behavioural intentions. Ajzen (1988) suggested that the more a person believes that they have behavioural control then the stronger the intention is to try for the goal.

Deci and Ryan's Self Determination Theory

Although the models of goal commitment that are at the heart of this research are based on value-expectancy theories, which have been briefly summarised above, the author has been heavily influenced by Deci and Ryan's self-determination theory (e.g., 1985), which is briefly outlined below.

According to this theory, individuals act for a variety of reasons other than to fulfil basic needs or drives and there is an innate need for competence, autonomy, and relatedness that motivates an ongoing interaction with the environment of seeking and achieving challenges that are optimal for one's capabilities (Deci & Ryan, 1985).

Deci and Ryan (1985) suggested that individuals spend large amounts of time doing many things for which there are no obvious or appreciable external rewards. The rewards are inherent in the activity. They suggested that individuals are motivated to perform certain tasks for broadly two reasons: intrinsic or extrinsic. When activities are pursued because the "rewards are inherent in the activity and, even though there may be secondary gains, the primary motivators are the spontaneous, internal experiences that accompany behaviour" (p. 11), individuals are said to be intrinsically motivated. When activities are pursued for reward or recognition (including self-esteem) and seen as a means to an end, rather than autotelic (having a purpose within themselves), individuals are said to be extrinsically motivated. Rather than just a distinction between intrinsic and extrinsic motivation, Deci and Ryan (1985) suggested individuals

attribute their behaviour along a continuum that ranges from extrinsic to intrinsic motivation, giving external, introjected, identificated, or intrinsic reasons for their behaviour. External reasons may include fear of punishment, or rule compliance. Introjected reasons may refer to self-esteem needs. Identification reasons include the perceived value of the behaviour, and intrinsic reasons include interest or enjoyment in the task itself.

According to Harackiewicz and Sansone (1991), asking individuals to set a specific target goal to guide their behaviour may influence how a person approaches and experiences an activity, how well they perform, and how much they enjoy the activity. Target goals may promote intrinsic interest by facilitating concentration and strengthening the intensity of focus on the task and leading individuals to discover the pleasurable aspects of the task. However, as well as positive effects there has been research that suggested goals could have negative effects, particularly on intrinsic motivation (e.g., Mossholder, 1980). Deci and Ryan (1985) suggested that "the imposition of goals implies an external evaluation, and any imposition of outcomes, any pressure toward achieving externally imposed standards, seems likely to undermine intrinsic motivation" (p. 56).

Participation and choice in the selection of goals is an important issue that has generated much research. Studies to heighten individuals' perception of choice (e.g., Zuckerman, Porac, Lathin, Smith, & Deci, 1978; Swann & Pittman, 1977) showed that environmental events that provide choice and increase feelings of self-determination promote intrinsic motivation and a more internal perceived locus of causality. However, choice may not solve the problem and goals, even when self-set, may be perceived as constraints and interfere with an individual's ongoing task involvement (Harackiewicz & Sansone, 1991).

Stress Theories

When researching the effects of goals on well-being the author referred mainly to the stress literature, and the research that directed the author's thinking is briefly outlined below. Stress is defined as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his/her well-being" (Lazarus & Folkman, 1984, p. 19). Cohen (1988) suggested that an appraisal of stress could cause negative psychological states such as anxiety or depression, elevation of physiological response, and behavioural adaptations.

Cooper, Sloan, and Williams (1988) completed extensive research on workplace stress and detailed a number of sources of pressure in the workplace. These include perceptions of having too much work to do; having personal beliefs that conflict with those of the organisations; inadequate guidance and back up from supervisors; a lack of social support; ambiguity in the nature of the job; role conflict; inadequate feedback about performance; insufficient finance and resources to work with; and individuals' perceptions that things are beyond their control.

The constructs of value and expectancy discussed in the behavioural and motivation theories above also play a prominent role in the stress literature. According to Edwards (1988), stress is the result of a negative discrepancy between an individual's perceived state and desired state, if the individual considers the presence of this discrepancy important. Thus, the magnitude of the stress is related to the level of importance attached to achieving the goal (Paterson & Neufeld, 1987). If the demands of the situation exceed the resources of the person and value is high this may cause stress. Therefore, if a goal is not valued or one is not committed to its achievement, a

perceived lack of progress towards the goal is not likely to result in negative affect.

Lazarus and Folkman (1984) suggested that an individual's initial assessment is concerned with the effects or consequences of a situation (positive, negative, harmful, threatening, challenging, or neutral), and that this initial appraisal is followed by a secondary appraisal of coping resources, such as time, money, and ability. If there is a doubt about one's ability to cope with a situation, then this may produce anxiety and have a negative effect on performance and well-being (Edwards, 1988). According to Jerusalem and Schwarzer (1992), "people who generally trust in their own capabilities to master all kinds of environmental demands also tend to interpret difficult achievement tasks as more challenging than threatening" (p. 199). They suggested that self-efficacy is a personal resource that buffers the effect of a stressful situation. Jerusalem and Schwarzer (1992) found that high self-efficacy buffers the experience of stress, whereas low self-efficacy puts individuals at risk for a dramatic increase in self-doubt, state anxiety, threat appraisals, and a low perception of their coping ability.

Karasek and Theorell (1990) suggested that although psychological demands of work, along with time pressures and conflicts, are significant risk factors associated with stress, the primary work related risk factor is a lack of control. Karasek's (1979) psychological demand/decision latitude model is split into four sectors or quadrants. It is suggested that the most adverse reactions of psychological strain (e.g., fatigue, anxiety, depression, and physical illness) occur when the psychological demands of a job are high and decision latitude (a combination of control over how one meets the job demands and how one uses one's skills) is low. Strain is low when there are low psychological demands and high decisional latitude. Behavioural and motivational consequences are also

included in Karasek's model. It is suggested that the individual is most active when there are high psychological demands and high decisional latitude, and the individual is passive where there are low psychological demands and low decisional latitude.

Karasek's (1979) psychological demand/decision latitude model was extended to include the concept of support (see Karasek & Theorell, 1990). Cohen (1988) suggested that support could either have a direct influence on health through behaviour or biological processes or provide a buffering effect on health in the presence of stress. Social support has an important role to play in moderating the effects of stress in the workplace. According to Cohen (1988), social support can take the form of information, identity, or self-esteem needs, tangible resources, or provide an influence by providing pressure to conform. Gentry and Kobasa (1984) reviewed the evidence in support of the premise that social support moderates the stress-illness relationship. From the research reviewed, it was suggested that social support had more effect in reducing stress related to role conflict and overload rather than underutilisation, job ambiguity, and job dissatisfaction. Notably social support was more influential in moderating stress related strain and illness if the social support was directly relevant to the environment and the stress. For example, managers and coworkers were most useful in mediating work related stressors. In addition, like the goodness of fit hypothesis (Folkman & Lazarus, 1984), Cutrona and Russell (1987) emphasised the need to match particular dimensions of social support with what is required to cope with a problem. For example, if extra time or resources were needed to achieve a particular goal, then the provision of the above would be useful, whilst the provision of emotional support might be less so.

Along similar lines to Weiner's (1985) suggestion that specific emotions are the product of particular causal attributions for success and failure,

Lazarus (1993) suggested that emotions are the product of appraisal and that emotions are a result of implacable logic. Each emotion is a product of a different appraisal of personal significance and arising from a different plot about relationships between a person and the environment. At a basic level he suggested that if an individual's goal is thwarted it would result in negative emotions. On the other hand, positive emotions would result from a perception of satisfactory progress towards achieving the goal. He recommended the need to establish a theory to determine the logic for each emotion and provides evidence (e.g., Smith & Lazarus, 1993; Scherer, 1993) for the antecedents of various emotions.

The Present Research

This research was conducted primarily in the workplace. It is suggested (e.g., Smith & Locke, 1990; Yearta et al., 1995) that it is crucial for organisational theorists and practitioners to increase their understanding of goal relationships in complex organisational contexts. According to Austin and Vancouver (1996), investigations that address theoretical issues in applied settings will lead to greater progress than either a theoretical or applied investigation alone. Thus, research that explores the relationships between goal perceptions and outcomes in an organisational context will not only increase our knowledge of how goals work outside of the laboratory setting but will also aid in the modification and design of effective goal setting processes (Lee et al., 1991).

According to Yearta et al. (1995), there are many reasons why it cannot be assumed that the relationships found in laboratory or experimental studies will hold perfectly in an organisational context. One reason is the use of subjective rather than objective measures of key goal dimensions. For example, rather than a positive relationship between goal difficulty and performance (Locke & Latham, 1990), Yearta et al. (1991) found that higher levels of perceived difficulty

were associated with lower levels of perceived performance. In many contexts including the workplace, the objective measurement of key goal dimensions may not be possible. For example, consider goal difficulty. Most individuals have different goals and all have different capabilities; therefore assessing the difficulty of individuals' goals is not easy (Yearta et al., 1995). Thus, this research is concerned with the measure of goal perceptions.

Where there has been research on goals in the workplace, researchers have often measured only a limited number of dimensions (e.g. Yearta et al., 1995). However, according to Yearta et al. (1995), motivation and behaviour is likely to be influenced by a multitude of individual, supervisory, peer, and other organisational factors. In addition, the degree of stress and anxiety experienced under a goal setting programme would be influenced by the total context in which the goal setting process occurs (Locke & Latham, 1990). Thus, there is merit in assessing a broad set of dimensions. For example, in addition to knowing that an individual values their goal or expects to achieve it, it will be helpful to identify the factors that influence these perceptions. A multidimensional approach is likely to be useful in designing effective goal setting programmes, particularly because the more distal determinants may be the more malleable ones.

The primary aim of this research is to examine the effects of workplace goal perceptions on commitment and affective well-being. However, according to Austin and Vancouver (1996), a proliferation of interrelated goal dimensions makes an examination of the goal construct problematic. They suggested that there are too many putative dimensions with minimal interconnections established empirically. However, using an appropriate measurement instrument and increasingly sophisticated theory driven analysis, for example, confirmatory factor analysis and structural equation modelling,

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models that include complex relationships can be specified a priori and tested.

Overview of the Thesis

This thesis consists of six chapters. This first chapter has been general introduction and overview of the literature. The second chapter details the design and piloting of a scale to measure goal perceptions. The third chapter details the further development of the goal perceptions questionnaire. The fourth chapter details the testing of the effects of goal perceptions on commitment and affects. The fifth chapter details an intervention using principles based on motivational interviewing to change goal perceptions. Finally, the sixth chapter is a general discussion. Chapters three and four are standalone papers that have been submitted to journals for publication. They therefore include relevant information from other parts of the thesis.

CHAPTER 2
Design and Piloting of a Scale to Measure Goal Perceptions

Abstract

The aim was to develop an instrument to measure an individual's perceptions of their goals. A total of 25 putative dimensions were identified with reference to psychological theories of motivation, behaviour, and existing goal commitment models. A questionnaire was developed comprising six items for each of the 25 putative goal dimensions. A total of 111 employees of a nationwide training company completed this 150-item questionnaire. Skewed items were eliminated. Confirmatory factor analysis was performed on all scales apart from Value and Specificity (which only had two items remaining following elimination of skewed items). Scales were tested singly and then in pairs to check the factor structure of each scale. Items were eliminated which detracted from the fit of the scale until the scale was deemed to fit appropriately. A total of 22 scales had Cronbach's alpha greater than 0.70, and 23 scales displayed adequate fit statistics in LISREL. Correlations between scale scores were inspected to check for consistency with specified relationships. This research has provided preliminary analysis for the development of a goal perceptions questionnaire.

Introduction

Existing Goal Dimension Scales

In recent years researchers have moved from describing goal effects to examining the underlying psychological mechanisms that mediate goal effects (Gellatly & Meyer, 1992). Mostly researchers have explored these mechanisms using ad hoc questionnaires (e.g., Steers, 1976; Ivancevich & McMahon, 1977), taking dimensions and the items to measure them from a variety of previous empirical research. A number of scales used in certain questionnaires have included only one or two items per scale (e.g., Emmons, 1986; Brunstein, 1993; Yearta et al. 1995; Sheldon & Kasser, 1998). Multi-item composite questionnaires to measure goal perceptions have mostly been restricted to scales that measure a single dimension. For example, Hollenbeck, Klein, O'Leary, and Wright (1989) developed a self-report measure of goal commitment and Ballantine, Nunns, and Brown (1992) developed a self-report measure of goal support. However, Lee et al. (1991) conducted an empirical analysis of Locke and Latham's (1984) goal setting questionnaire that measured a number of goal perceptions (using a multi-item format) specifically for use in organisations.

The problem with Locke and Latham's (1984) questionnaire and other goal questionnaires used in organisations to measure goal perceptions (e.g., Steers's, 1976) is that a number of the items explore job perceptions rather than goal perceptions. For example, in Locke and Latham's questionnaire items include "The top people here do not set a very good example for the employees since they are dishonest themselves" and "I understand exactly what I am supposed to do on my job". Steers' questionnaire includes items such as "I receive a considerable amount of feedback concerning my quantity of output on the job". Such questionnaires may only be used with individuals who are involved in a formal organisational goal setting programme.

Other questionnaires that the author has come across are also, by design, restricted to other settings (e.g., Duda & Nicholls, 1992).

Although this research is primarily concerned in studying goal perceptions in the workplace, it was felt there was a need for a questionnaire that measured a number of goal perceptions using a multi-item approach and that only explored goal perceptions and not aspects of the work or workplace, a scale that could be used as a generic scale; that is to say one that was not restricted to any particular setting.

Scale Development

The development of scales should be framed by a clear understanding of what is to be measured and why (Cox & Ferguson, 1994). Thus, the first step in designing a measurement instrument of goal perceptions was to identify key goal constructs or characteristics/elements of effective goals or goal setting processes. Austin and Vancouver (1996) reviewed previous research on goals that attempted "to identify dimensions or categories on which goals or goal processes vary" (p. 342). These references (e.g., Winell, 1987; Steers, 1976), goal commitment models (e.g., Hollenbeck & Klein, 1987; Wofford et al., 1992), and other psychological theories (e.g., Deci & Ryan, 1991) have been used to identify putative dimensions.

Personality traits such as Type A, locus of control, and need for achievement were included in Hollenbeck and Klein's (1987) model. However, according to Locke et al. (1981) and Locke and Latham (1990), studies of individual differences in goal setting have been inconsistent. Klein et al. (1999), in their meta-analysis of the determinants of goal commitment, highlighted the role of goal perceptions rather than personality variables in determining goal commitment. In addition, Emmons (1986) suggested individuals' perceptions of their idiosyncratic goals would account for greater

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amounts of variance in affective well-being than personality traits. Therefore, although it is appreciated that personality traits may be important influences on commitment and well-being, it is felt that they represent a more distal influence and that goal perceptions are the more proximal determinants.

Researchers have attempted to categorise goal dimensions. For example, Hollenbeck and Klein (1987) divided dimensions into situational and personal factors that affect either the attractiveness or expectancy of goal attainment (see Figure 1). Beggs (1990) divided a number of dimensions into sets or groups: internal factors such as commitment and acceptance; interpersonal factors that represent factors concerned with how goal setting is approached by a superior/coach such as feedback, support, and participation; and contextual factors such as proximity and goal conflict. These distinctions might prove to be useful although at this stage there is no attempt to categorise the dimensions.

Goal Dimensions to be Measured

It may have been preferable to examine the putative dimensions alphabetically. However, it is considered that the best or most logical starting point for examining the goal dimensions to be included in this research is with reference to Hollenbeck and Klein's (1987) model. Goal commitment was discussed at some length in the introduction to this thesis. It is however briefly revisited, in order to discuss its similarities or differences with other constructs such as acceptance and intention. According to Hollenbeck and Klein's model, the immediate determinants of goal commitment are "goal attractiveness" and "goal expectancy". These constructs have been renamed "value" and "success expectation" respectively. A number of dimensions proposed by Hollenbeck and Klein's model have been renamed. The rationale for renaming, or in some instances the adaptation of dimensions, is provided when discussing the individual dimensions.

Commitment

The critical role that goal commitment plays in goal setting has been explored in the introduction to this thesis. However, there are some additional points that were not included. These mainly concern construct issues, which are addressed below.

The differences between the concepts of acceptance and commitment have been the subject of much debate (see Locke & Latham, 1990). According to Hollenbeck et al. (1989b), goal acceptance does not necessary imply that the person is psychologically bound to the goal, just that it is accepted. However, the terms acceptance and commitment are often used interchangeably (Locke & Latham, 1990; Hollenbeck & Klein, 1987). Research by Earley and Kanfer (1985) found that commitment and acceptance measures formed one, highly homogeneous index, which seems to suggest that these constructs are not significantly different. Locke and Latham (1990) suggested that "commitment is now viewed as the more inclusive concept in that it refers to one's attachment to or determination to reach a goal, regardless of where the goal came from. Thus it can apply to any goal, whether self set, participatively set, or assigned." (p. 125).

In addition to the similarities and differences between commitment and acceptance Tubbs (1993) suggested that previous attempts to measure commitment measure other concepts such as perceptions of the amount of effort required or enjoyment of the process. According to Tubbs (1993) and Wright, O'Leary-Kelly, Cortina, Klein, and Hollenbeck (1994), the strength of intention aspect of commitment is most consistent with common definitions of commitment and is most directly tapped by self-report measures. Intention is a critical construct in Ajzen and Fishbein's (1977) theory of reasoned action, which was briefly reviewed in the introduction to this thesis. They propose that an individual's intention to perform a specific behaviour

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has a direct relationship with actual behaviour. The items to measure commitment will reflect an intention or determination to achieve, but in line with the majority of goal research, the dimension is termed commitment.

Value

Hollenbeck and Klein's (1987), Locke and Latham's (1990), and Wofford et al.'s (1992) models of the antecedents of goal commitment are based on value expectancy theory (e.g., Vroom, 1964). These models and other researchers (e.g., Gollwitzer, 1993) propose that value is one of the main antecedents of commitment. Rather than value, Hollenbeck and Klein (1987) use the term "attractiveness of goal attainment". However, this research adopts the term value.

Much of the early goal research was conducted in the laboratory. It is difficult to appreciate the similarities and compare the motivational effects between generating anagrams and similar laboratory tasks versus meeting sales targets, securing a high profile customer account, or promotion. This is not to say that when referring to workplace goals we are talking about the level of value that inspires individuals to great feats of achievement, like climbing Mount Everest. However, workplace goals may be quite highly valued perhaps because of extrinsic incentives, threats or because individuals are intrinsically motivated by a real interest or enjoyment in the task.

In the workplace, the achievement of a specific goal is often linked to individuals' pay and bonuses. Hollenbeck and Klein (1987) propose that monetary incentives increase the attractiveness of goal attainment and individuals' goal commitment. Research by Locke and Shaw (1984) reported significant positive relationships between value of winning and commitment to winning a monetary prize in a competitive situation. Hollenbeck et al. (1989a) found the provision

of monetary incentives was significantly associated with increased commitment. In addition, research by Klein and Wright (1994) found that monetary incentives significantly influenced goal attractiveness. However, research by Allscheid and Cellar (1996) did not find that rewards increased commitment. They suggested that this was because individuals did not feel that the reward was worth the effort needed to achieve the goal. In a review of the literature pertaining to incentives, Locke and Latham (1990) suggested that results have been equivocal, with many studies showing improvements in commitment and/or performance, and as many reporting no difference, or even a detrimental effect.

Monetary incentives are not the only way in which managers have tried to affect motivation. Individuals may be committed (or not) to achieve their goal because of fear of punishment. Latham and Saari (1982) reported that unionised truck drivers committed themselves to a goal setting program under certain conditions; for example, that it would not lead to layoffs, that monetary incentives (viewed as potentially punitive) would not be used, that the goals would be voluntary, that supervisors would be supportive of attempts to reach the goals, and the truckers would not be punished for failure. The program was successful as long as the employees believed that these terms were being met. When the employees concluded that these conditions were not being met, they interpreted the program as punitive, and rejected it by going on strike. A study by Emurian and Brady (1981) in which subjects were told they had to meet certain objectives or bonus money would be subtracted from their group bonus account, found that this led to a much lower performance than a positive condition in which they earned money for positive accomplishment.

The majority of research in the organisational literature considers value in terms of extrinsic value. Therefore most of the research attempts to

manipulate bonus or pay in an attempt to affect motivation. However, individuals may be just or even more inspired by working towards goals that they find intrinsically motivating. Indeed, according to Deci and Ryan (1985), intrinsic motivation is vulnerable to environmental constraints such as monetary rewards. Therefore offering monetary rewards may reduce intrinsic motivation towards a goal.

Conflict

Goal conflict is not a dimension included in Hollenbeck and Klein's (1987) model. However, it is considered an important dimension for effective goal setting. An individual invariably has a number of goals that they are currently working towards, and there is a real chance that a particular goal may conflict with individuals' values, priorities, or other goals. According to Locke and Latham (1984), goal conflict must be minimised in order to maximise the effects of goal setting. However, goal conflicts are part of the human experience (Emmons, 1999) and goal conflict may be the norm rather than the exception (Locke & Latham, 1990).

According to Emmons (1999), conflict may exist because there are two (or more) mutually exclusive competing choices, for example, quality versus quantity. Alternatively, conflict may involve opposing feelings toward the same object often referred to as ambivalence; for example, a desire to voice one's opinions may conflict with a perception that this may result in negative consequences.

Lee et al. (1991) suggested that "negative consequences of reduced job satisfaction, and/or health related problems of somatic complaints, anxiety and insomnia may result when employees have too many conflicting goals" (p. 468-469). According to Cooper, Sloan, and Williams (1988), stress may result when there is conflict either between personal beliefs and those of the organisation, or between job tasks and demands. Emmons (1999) suggested that chronic conflicts

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are at the root of many physical illnesses and poor mental and emotional health. Depression, anxiety, ulcers, and heart disease have all been associated with the inner psychological turmoil that surrounds unresolved conflict. Emmons (1986) found that negative mood was associated with conflict among goal strivings. Emmons and King (1988) found goal conflict was associated with negative affect, depression, anxiety, and physical symptoms (e.g., headaches, chest pains, nausea, and dizziness).

Thus, from the literature it is suggested that if an individual's goal conflicts with their ideals or ethics or conflicting goals are set (e.g., quantity versus quality) this may effect the extent to which individuals value their goal, are committed to achieving it, and it may well have negative effects on well-being.

Publicness

Publicness is a dimension included in both Hollenbeck and Klein's (1987) and Locke and Latham's (1990) models. Both these models propose that publicness is a dimension that will influence the attractiveness or desirability of goal attainment.

According to Salancik (1977), individuals' commitment to their goals increases dependent on the extent to which significant others are aware of the goal. The Theory of Planned Behaviour (e.g., Ajzen & Madden, 1986), as reviewed in the introduction to this thesis, predicts that an individual's beliefs about what other people expect them to do (normative beliefs) affects their intention to act. If an individual's goals are public, pressure from normative beliefs may increase. According to research (Kiesler, 1971; Janis & Mann, 1977), if goals are made public, intention will be stronger than when goals are kept to oneself.

In the workplace, controlling strategies take the form of public evaluations to ensure compliance (Deci & Ryan, 1985). Researchers (Dweck & Gilliard, 1975; Pallak & Cummings, 1976) suggested that it is easy to abandon a goal known only to oneself. If, however, an individual's goal were known to others then abandoning it would appear inconsistent. Hayes, Rosenforb, Wulfert, Munt, Harn, and Zettle (1985), in a series of studies, had subjects in a public condition either hand their written goals to the experimenter to read them aloud or read them aloud themselves. In both studies, the public commitment subjects far outperformed the private commitment subjects. Although Hollenbeck and Klein (1987) proposed that publicness is an antecedent of the attractiveness of goal attainment, research by them and their colleagues (Hollenbeck et al., 1989a) looked at the direct effects of publicness on commitment and found a significant correlation between goal publicness and goal commitment. A further study by Hollenbeck et al. (1989b) found that commitment to difficult goals was higher when goals were made public rather than private.

Perhaps publicness may not affect the perceived value of a goal, but by making or having goals which are known to others, this may increase an individual's commitment to it, for fear of being seen as inconsistent should they abandon it or perhaps as a failure should they not achieve it.

Origin

According to Hollenbeck and Klein (1987), the extent to which an individual is free to engage in a behaviour will influence their perception of the attractiveness of goal attainment. The term "volition" originates from Salincik (1977). They suggested that volition should be closely associated with goal origin and this research adopts the term origin rather than using the term volition as the former seems more descriptive. Origin is associated with a

number of other factors, such as choice, participation as well as self-determination (e.g., Deci & Ryan, 1985).

Salincik (1977) suggested that volition is one of the more difficult characteristics of human action to define precisely but that a major characteristic related to the degree of perceived volition of action is choice. Rotter (1979) suggested that choice is essentially motivational, that individuals get more involved, work harder, and enjoy tasks more if given a choice. According to Williams (1998), managers can influence intrinsic motivation by the way choice is presented to employees, and the provision of choice in organisational situations holds immense potential. He suggested that if workers feel that choice is offered because it signifies an organisational belief that employees possess the requisite skills and abilities to make responsible decisions, then they see choice as competence enhancing which should result in heightened feelings of self-determination and increased intrinsic motivation.

In a formal goal setting process, the extent to which an individual perceives that they have set their own goals may well reflect the levels of participation within that process. According to Kanfer and Kanfer (1991), involvement in the goal setting processes provides an opportunity for individuals to express their opinions. It enhances a sense of personal control that enhances subsequent goal commitment and thus performance. Hollenbeck and Klein (1987) suggested that goals are often assigned without consultation or choice, which would imply little volition, that participatively set goals imply some volition and self-set goals imply volition. Participation overlaps somewhat with the concept of support and management styles. For example, a manager may have a clear idea of the goals that their subordinate should be working towards. However, the management style adopted by the manager may affect the extent to which the subordinate

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perceives that he/she has had a say in the process, and perceives that he/she has had a choice in what goals to work towards.

There is a long and ongoing debate about the need or not for participation in the goal setting process. Locke and Latham (1990) reported on a resolution of confounding findings between two opposing teams of researchers. Latham and his colleagues consistently reported findings suggesting that there was no difference between participatively and assigned goals. However, Erez and his colleagues persistently reported that commitment was higher when goals were set participatively. Rather than continue to produce conflicting empirical papers the two sides got together to initiate a joint experiment. They discussed the methodology previously used and three differences between the two sets of instructions were highlighted: (a) Latham provided a rationale for why the task was important, thus utilising a "tell and sell" rather than only a "tell" approach; (b) Latham told all his subjects that the goal was reachable; and (c) Latham stressed a warm and friendly rather than an abrupt tone, i.e. highly supportive. Thus, the differences in the result may have been due to Erez's assigned condition working less well than Latham's, rather than Erez's participative condition working better than Latham's. A differing definition of what constitutes participatory goal setting would appear to be what caused the conflicting results. Differences found in a number of studies looking into the participatory versus assigned goal could be attributed to the extremes in the way the goals were set. For example, in the experiment conducted by Latham and Saari (1979), in the nonsupportive condition the experimenter told subjects that he was in a hurry, told subjects to listen because he did not have a lot of time, tossed the sheet of paper to the subject, and continually glared at his watch; generally behaving in a rude and abrupt manner.

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In an empirical examination of the antecedents of goal commitment to difficult goals, Hollenbeck et al. (1989b) manipulated goal origin, allowing half of the subjects to set their own goals who were then yoked to subjects who were assigned the same goal. They found no direct relationship between origin and commitment. The fact that Hollenbeck et al. found no relationship between origin and commitment may be because the tasks were perceived as unimportant; they were laboratory tasks which may have little bearing on important issues in an individual's life. This could also be true for other experiments that manipulate origin. More recent research in a field setting (Yearta et al., 1995) found modest but significant relationship between participation and performance, with both job holders and supervisors reporting that the more a job holder participated in setting the goal, the higher the job holder's performance.

Bandura (1997) suggested that goals could be applied in ways that breed dislike rather than nurture interest, and that goals are unlikely to have much effect if there is little personal commitment to them. He suggested that goal commitment could be affected by the degree to which they are personally determined. When people select their own goals, they are likely to have greater self-involvement in achieving them. If goals are prescribed by others, individuals do not necessarily accept the goals or feel obligated to meet them. Deci and Ryan (e.g., 1985) strongly advocate allowing individuals at least some say in the goals that they have to work towards. They suggested that individuals have an innate need for autonomy, effectance, and control and that the imposition of goals can undermine self-determination, feelings of control, and intrinsic motivation. It is suggested that individuals want to be involved in making decisions about important issues in their life, they want to be in control, and that the extent to which they feel they have a choice in the goals will affect the extent to which they value them.

Specificity

Hollenbeck and Klein's (1987) model proposed that explicitness is a situational factor that will affect the attractiveness of goal attainment. Hollenbeck and Klien liken a lack of explicitness to vagueness and refer to the goal specificity literature. Rather than using the term explicitness, in line with the goal setting literature this research uses the term specificity. Locke et al. (1981) defined goal specificity as the "degree and quantitative precision with which the aim is specified" (p. 26).

The major finding emanating from the widespread research on goal setting is that difficult and specific goals lead to higher levels of performance than do easy or vague goals (Locke et al., 1981). Locke et al. (1981) found that only 2 of the 55 studies reviewed failed to show that specific and challenging goals produced the best performance. In a later review Mento, Steel, and Karren (1984) went as far as to suggest that "if there ever is to be a viable candidate from the organisational sciences for elevation to the lofty status of a scientific law of nature, then the relationships between goal difficulty, specificity/difficulty and task performance are worthy of our serious consideration" (p. 74).

Specific goals are hypothesised to work with reference to the control theory model of self-regulation that suggests individuals act to minimise the discrepancy between their present condition and a desired standard or goal. Early studies of goal specificity were not looking for a main effect for specificity and failed to hold difficulty constant, contrasting difficult and specific goals with instructions to "do your best". Some experiments have attempted to search for a main effect. Locke, Chah, Harrison, and Lustgarten (1989), endeavoured to manipulate specificity and found that the more specific the goal, the lower the performance variance. However, they failed to find evidence to support the suggestion that specificity had

an independent effect on performance. Klein, Whitener, and Ilgen (1990) supported Locke et al.'s (1989) finding that the more specific the goal the smaller the discrepancy between that goal and performance. They also found (trial 2 only) a significant main effect for specificity on performance after controlling for ability and difficulty but not when controlling for strategy.

Klein et al. (1990) suggested that goals direct attention and action by indicating what needs to be accomplished. Regardless of goal difficulty, as specificity increases, attention and action should become more focused (e.g., Frost & Mahoney, 1976). It was also suggested that specific goals, by providing more information and clarification of the task, should provide more direction for choosing or developing appropriate strategies (Earley, Wojnaroski, & Prest, 1987). It is suggested that vague goals make poor reference standards (Campion & Lord, 1982). According to Emmons (1992), the more abstract the goal, the less clear it will be as to what outcomes are acceptable, therefore the more specific the goal, the less ambiguity in evaluating progress.

Although Hollenbeck and Klein (1987) propose that specificity (or as they term it explicitness) will affect value, they provide no evidence to support this relationship, or even link specificity to commitment. Indeed, Hollenbeck and Klein admitted that the rationale for why vague goals may affect value was not clear. On an intuitive level if an individual has gone through a process of detailing specific goals (rather than ill formed and vague intentions) then their intention is clear and well defined. The action required to achieve a specific goal is more obvious; therefore, their behaviour is more directed, and their values and commitment to that goal engaged. For example, a goal to produce 20 widgets is more exact than a goal to produce some or even as many as possible. If the goal is to produce 20 widgets the course of action needed is clearer, strategies and plans needed to achieve the

goal are considered, and the effort needed to achieve this goal can be assessed against the value of achievement. Thus, it is proposed that an individual's behaviour is more directed as the individuals' values and commitment has been engaged through making the goal specific as opposed to a vague intention.

Competition

Hollenbeck and Klein's (1987) model proposed that competition is a situational factor that will affect the attractiveness of goal attainment. Locke and Latham (1990) also included competition in their model. They suggested that as competitive groups generally performed better than those in the noncompetitive conditions and this may be due to an increase in commitment. However, they admit that there is no research that specifically measures this relationship and recent research by Allscheid and Cellar (1996) and Lerner and Locke (1995) did not support the hypothesised relationship.

There are many types of competition, some promote a win win scenario whilst in other situations there can only be one winner. A story often quoted about the benefits of competition is about the digging of the Panama Canal. The Chief of the Canal Commission started a weekly newspaper and recorded in it the productivity of the teams. This encouraged teams to try to outdo each other. However, in that situation nobody lost, there was no reward for increased productivity, it was a case of feedback leading to spontaneous nonformal competition. In a number of situations within the workplace, for example, with promotion goals, there is often only one winner. When there can only be one winner or when competition is formal this may promote an entirely different reaction from individuals.

Over the years, there has been research that has found negative effects of competition. Research by Forward and Zander (1971) found that

competition led to goal choices that were unrealistically high. Campbell and Furrer (1995) found that competition had a significant dysfunctional effect on task performance within goal setting conditions. They suggested that this may be because of competition producing an increase in anxiety and a decrease in concentration, or a decrease in intrinsic motivation brought on by feelings of loss of control. Hollenbeck and Klein (1987) suggested that pressure generated by competitive situations might increase the desire to reach a goal. However the research thus far has not supported this proposed relationship; in fact evidence suggests that rather being a positive influence, competition may have negative effects.

Enjoyment

This dimension is not included in Hollenbeck and Klein's (1987) model or any of the other models of goal commitment reviewed in this research. However, the author considers that enjoyment is an important dimension in the goal setting process. Clearly some tasks we enjoy working on and some tasks we do not. We seek out and persist at task that we enjoy, whereas we avoid and abandon (given an option) those tasks that we find tedious or onerous. Wankel (1993) suggested that enjoyment results from the satiation of biological, or growth oriented needs, involving a cognitive dimension focused on the perception of successfully applying one's skills to meet environmental challenges. This idea forms the basis of organismic theories of motivation such as Deci and Ryan's (1985) theory of self-determination (see Chapter One). Deci and Ryan (1985) suggested that intrinsic motivation for a task is often reflected by the level of enjoyment that is experienced as a result of working towards such a task.

Wankel (1993) explored the importance of enjoyment in adherence and psychological benefits from physical activity. He suggested that individuals who enjoy physical exercise are more likely to persist at

it, whilst a lack of enjoyment is an often cited reason for withdrawal from sports programmes. Although in the workplace withdrawal from a goal is not always an option, if an individual is not enjoying working towards their goal this might have an influence on their commitment to it, subsequent performance, and affective well-being.

It would be presumptuous to consider that measuring levels of enjoyment would be sufficient to reflect the idea that individuals are working towards challenging and organismically congruent goals. Of course, individuals might enjoy working towards a particular goal because they are looking forward to the handsome monetary rewards that are contingent on its achievement (although those handsome monetary rewards might well then be spent on taking organismically congruent holidays). Wankel (1993) suggested that the task itself does not necessarily result in enjoyment but that it is the presence or absence of the flow elements such as realistic challenge, clear demands, feedback, focusing of attention, and total absorption in the activity that engenders enjoyment. This would suggest that enjoyment is an important outcome variable that reflects the presence of these factors. In addition, from Wankel's (1993) research, it is clear that perceived enjoyment affects continued participation, albeit in a sporting context, which would suggest that enjoyment engenders commitment.

Importance to Others

This dimension measures the extent to which individuals' consider that other people think that their (the individual's) goal is important. It is proposed that the implicit or explicit attitudes of others or group norms may affect an individual's motivation to achieve their goal. According to Ajzen and Fishbein's (1977) theory of reasoned action, intention (which is equated with commitment) is influenced by attitude and normative beliefs. Attitude includes beliefs about the consequences of performing the behaviour and the values that the

individual places on those consequences. Normative beliefs include perceptions of other people's attitudes to an individual's goal and the felt pressure from others to perform a certain behaviour.

Bandura (1986) suggested that goals that involve responsibility to others can generate social pressure to follow through, or not, as can been seen in the practice of "systematic soldiering" or "restriction of output". Normative information is often acquired through modelling which is, according to Bandura's (1986), a powerful motivational technique.

Locke and Latham (1990) put great emphasis on the role of managers and peers in affecting individuals' perceptions of the desirability or appropriateness of trying for a given goal. They suggested that supervisors convey self-efficacy information, exert pressure, provide a rationale, and normative information. It is proposed that many of the influences that are exerted by a supervisor or significant other would be measured under the auspices of perceived support. However, in addition, it is proposed that individuals' values are affected by the perceived importance that others place on a goal. Locke and Latham (1990) suggested that if high school students felt that teachers, parents, employers, and colleagues were totally indifferent to their grades many of them would not try to obtain the higher grades. Therefore the value that others put on goal attainment will affect individuals' commitment to these goals. In the workplace, individuals may be motivated to achieve their goal if they think that their supervisor or manager thinks it is an important goal. Two goal field studies (Ivancevich, 1976; Latham & Yukl, 1975) attributed the lack of a significant effect of goal difficulty on performance to low organisational support, which included a perception that the organisation did not place much importance on the goals.

In a perfect world, significant others would readily support our goals, but unfortunately, according to Emmons (1999), our goals are not

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always met with open arms. It is therefore proposed that the perceived importance or value that others place on a goal may affect an individual's value or commitment to their goal.

Success Expectation

In the introduction to this thesis, the major theories that influenced this research were outlined. All of them include some reference to success expectation or similar constructs such as self-efficacy (e.g., Bandura, 1997), expectancy (e.g., Vroom, 1964), and behavioural control (e.g., Ajzen & Madden, 1986), and all provide evidence to suggest that this dimension plays a major role in influencing motivation, behaviour, and well-being. Hollenbeck and Klein's (1987), Locke and Latham's (1990), and Wofford et al.'s (1992) models are based on value expectancy theory (e.g., Vroom) and their models propose that expectancy is one of the main direct determinants of commitment (the other being value). Subsequent research has supported this relationship. A meta-analysis conducted by Klein et al. (1999) found that expectancy of goal attainment was highly related to goal commitment and an earlier one by Wofford et al. (1992) found that both self-efficacy and expectancy were significantly related to goal commitment.

There has been much debate concerning the similarities or differences between the concepts of self-efficacy, expectancy and other constructs (see Kirsch, 1985; 1986). Expectancy and self-efficacy are terms that are used to describe a construct that requires an assessment of ones ability to achieve a specific task. According to Kirsch (1985, 1986), Rotter's (1954) expectancy and Bandura's (1977) self-efficacy are one and the same concept, and "with respect to tests of ability, the differences between the two theories appear to be largely semantic" (p. 826, 1985). Kirsch (1985) suggested that when two scales are highly correlated and have virtually identical predictive power it is likely they are measuring the same construct. Others have

commented on the similarities between the two constructs (e.g.,
Locke, Frederick, Bobko, & Lee, 1984; Kok, Den Boer, De Vries,
Gerards, Hospers, & Mudde, 1990; Lee & Bobko, 1994). In this
research, the term "success expectation" is used. However, it is
considered that there is no difference (apart from semantic) between
the terms expectancy as defined by Kirsch (1986) and success
expectation, but it was considered that the term "success expectation"
was more descriptive. This dimension will measure the extent to
which individuals' perceive that they can achieve their goal. Those
dimensions that are proposed to affect success expectation are now
discussed.

Difficulty

Klein et al. (1999) noted that neither Hollenbeck and Klein (1987) nor
Locke et al. (1988) include goal difficulty as an antecedent of goal
commitment. Klein et al. (1999) suggested that goal commitment
may decline as goals become objectively more difficult, although in
their meta-analysis they found no evidence to support their proposal.
However, Wofford et al. (1992), in their meta-analysis of the
antecedents and consequences of goal commitment, did find that
difficulty was significantly (positively) related to commitment.

Although there is not much research linking difficulty to commitment
there is research linking difficulty to performance, and difficulty
plays a major role in Locke and Latham's (1990) goal theory.
According to Locke and Latham (1990), there are "175 studies
showing positive (140 studies) or contingently positive (35 studies,
i.e., positive for one subgroup or condition) associations between goal
difficulty and performance, and 17 that show no effect or effects in
the opposite direction. This represents a success rate (including
contingent success) of 91%" (p. 29).

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It is suggested that, rather than being directly linked to goal commitment, it is more likely that goal difficulty is associated with lower success expectation (e.g., Kirsch, 1986; Locke, Motowidlo, & Bobko, 1986). However, relationships between difficulty and expectancy may depend on how the constructs are defined and measured. According to Wright (1992), the goal setting literature has failed to specifically define the construct of goal difficulty and researchers have to be clear about what they are measuring in order to aid understanding of the relationships between goal dimensions.

In laboratory studies, goal difficulty is often defined externally to an individual. The measure is objective and quantitative in nature and usually determined by performance norms (Lee & Bobko, 1992). When conducting research in organisations many factors preclude an accurate and objective assessment of goal difficulty. Mostly individuals have different goals and all have different capabilities; therefore assessing the difficulty of individuals' goals is not easy (Yearta et al., 1995). Difficulty measures can be objective, and may be either self or externally referenced. Lee and Bobko (1992) found that an externally referenced subjective difficulty measure was unrelated to self-efficacy but that a self-referenced goal difficulty was negatively related to self-efficacy.

Goal difficulty may also be linked to goal value. Difficult goals when compared with easy goals may be of greater value perhaps because not many people can achieve them or because they require more effort and ability to achieve, along the lines of "if it's not difficult it wouldn't be worth doing". Klein and Wright (1994) found that a perceived increase in the difficulty of the task resulted in goal attainment being evaluated as more attractive. Matsui, Okada, and Mizuguchi (1981) found that the value of goal attainment was higher for the hard goal than for the easy goal and that performance was higher for the highly valued goals.

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A number of studies have looked at the effect of difficulty on affective responses. Lee et al. (1991), in their empirical analysis of Locke and Latham's (1984) goals setting questionnaire, failed to establish a factor which represented the core attribute of difficulty, although a scale labelled goal stress that included a measure of goal difficulty showed a positive and significant relationship with somatic complaints. Locke and Latham (1990), when discussing the negative aspects of goal setting, cited a study by Nebeker (1987) where those individuals who were assigned hard standards experienced greater stress. Sales (1970) found that participants in an overload condition experienced more tension and had a higher heart rate than those in the underload condition. Gellatly and Meyer (1992) found goal difficulty affected heart rate, and they suggested that an increase in arousal may not always be desirable and may interfere with tasks that are performed better at lower levels of arousal.

What Makes a Goal Difficult?

In addition to measuring whether individuals think their goals are difficult, it may be important to understand why individuals perceive their goals to be difficult: what characteristics of a goal (or the individual) engender perceptions of goal difficulty. Lee et al. (1991) suggested that "difficulty items should span a wider domain of what is meant by goal difficulty, including: the amount of effort required, the degree of challenge, the degree of thought and problem solving skills, or the amount of required persistence and tenacity (rather than simply a consideration of whether or not goals are too difficult" (p. 476).

According to Wright (1990), goal difficulty has often been measured using a single item or a small number of items that vary drastically in their content, and that may result in measuring effort, complexity, or ability. For example, Steers (1976) included in the scale to measure

goal difficulty one item that measured effort and one that measured skill and ability.

Many of the laboratory goal setting studies involve generating anagrams and the like. An easy goal would be one that most people could achieve, whereas a difficult goal would be one that only a few could achieve. Generating five anagrams may be considered an easy task, whereas generating 15 may be considered a difficult task. However, generating 15 anagrams is not a complex task, just harder, possibly requiring greater ability and more effort to achieve. Locke and Latham (1990) briefly make the distinction between goals that require high levels of skill and knowledge and goals that require high levels of effort. A task can be hard because it is complex, that is, it requires a high level of skills and knowledge. For example, writing a Ph.D. thesis is more complicated than writing a thank you note. A task can also be hard because it requires a great deal of effort; digging the foundations for a pool takes more effort than digging a hole to plant a flower seed (Locke et al., 1981).

Motivation and behaviour theories such as Attribution Theory (see Schoeneman & Curry, 1990) recognise that people differentiate between ability and effort when attributing their success and failure. According to Nicholls (1989), ability and effort are clearly differentiated. "Ability is conceived as capacity, which (if low) may limit or (if high) may increase the effect of effort on performance. Conversely, the effect of effort is constrained by ability. When achievement is equal, lower effort implies higher ability" (p. 46). Bandura's (1977) self-efficacy theory also differentiates between ability and effort; he suggested that perceptions of efficacy are concerned with an individual's belief that they can successfully execute the behaviour required to produce a particular outcome. Efficacy expectations serve to determine the amount of effort that will be expended.

It may be important to differentiate between goals that require a great deal of effort, or ability to achieve, and goals that are complex. It may be that some goals are both complex and require a great deal of effort to achieve. Perceptions of difficulty, complexity, and effort may be affected by perceptions of ability. These relationships and their effect on key goal perceptions such as success expectation cannot be explored unless these constructs are measured.

Complexity

Hollenbeck and Klein (1987), in their model of the antecedents of goal commitment, proposed that task complexity would affect expectancy of goal attainment. Wofford et al. (1992), in their meta-analysis, found that complexity was marginally related to goal commitment. Other researchers have suggested it may be an important characteristic that is linked to other dimensions. For example, Austin and Vancouver (1996) suggested that goals that are more complex have a greater potential for conflict because they have more linkages to other goals, sub goals, or behaviours, or perhaps because other people are involved in working towards them.

Effort

Goals may be perceived as being difficult or success expectation for goal attainment may be low because the goal requires a great deal of effort to achieve. Previous goal perceptions scales; for example, the Goal Description Scale (Winell, 1987) specifically measures "ease" (the degree of effort needed for goal attainment). A perception of effort may be important because it is likely that an individual may perform a cost benefit analysis, assessing the amount of effort required to achieve the goal against its value. A study by Allscheid and Cellar (1996) found that participants were not committed to their goal because they did not feel that the reward was worth the effort needed to achieve the goal.

Ability

Hollenbeck and Klein's (1987) model proposed that ability is a personal factor that will influence the expectancy of goal attainment. In a test of Hollenbeck and Klein's (1987) model, Klein et al. (1999) found significant and positive relationships between ability and commitment (they did not test for mediated effects). However, perceptions of ability are traditionally considered the main influence on success expectation and similar constructs (e.g., self-efficacy; Bandura, 1997).

Although the dimension of ability is proposed to primarily affect success expectation, this dimension may also display relationships with other key variables. For example, according to Harter's self-serving bias (e.g., 1978), a task's importance or value would be downgraded if the individual did not feel able to achieve it. Therefore, the greater the belief the goal will be attained, the higher the value of the goal, the greater the motivational tendency to engage in that behaviour (Weiner, 1992). However, if perceptions of ability are low and the importance of a task cannot be reduced this may have a negative effect on affects. There is much research to suggest that a perception of a lack of ability causes stress (Lazarus & Folkman, 1984; Edwards, 1988; Locke & Latham, 1990; Locke & Taylor, 1990). Ability may influence both success expectation and value and it may be an individuals' perceived ability has the greatest impact on individuals' affective responses to their goal.

Support

Hollenbeck and Klein's (1987) model proposes that supervisor supportiveness is a situational factor that will influence the expectancy of goal attainment. Support is an important element in effective management per se (e.g., Bowers & Seashore, 1966; Likert, 1961; Locke & Latham, 1984) and an essential component of effective goal setting (Latham & Saari, 1979). Lee et al. (1991)

suggested that a manager plays a role in many areas of goal setting. For example, managers should minimise goal conflict, stress, or other dysfunctions, and should provide feedback and sufficient resources (e.g., additional equipment, people, time, or money) to enable the individual to achieve their goal. Obviously, support is a complex construct. Ballantine et al. (1992) devised a scale to measure perceived support in respect of an individual's goal. This scale included four categories of support; emotional, instrumental, information, and appraisal support. In their research, these four categories formed a single factor of overall support.

Latham and Yukl (1975) suggested that the failure of goal setting to improve the performance of participants in their study could be attributed to the lack of supervisor support for the process. They suggested that there was little involvement by the management in explaining, guiding and coordinating the programme. Further research (Anderson & O'Reilly, 1981) found that perceived top management support of the company goal setting system was significantly related to the performance of manufacturing managers.

There is much evidence to suggest that support plays a major role in moderating the effects of stress per se (e.g., Karasek & Theorell, 1990; Cohen, 1988) and also stress caused by goals. For example, Ruehlman and Wolchik (1988) found that after accounting for goal characteristics (which included perceptions of challenge, control, difficulty, stressfulness, origin, and time) perceptions of support accounted for a significant albeit small amount of additional variance in a measure of well-being.

Hollenbeck and Klein's (1987) dimension of support pertained to supervisor support. However, support may be received from many people, managers, colleagues, friends, spouses etc. In this research, rather than restrict this measure to supervisor support, this dimension

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will measure the extent to which individuals feel they are supported from any source.

Time

This dimension was not specifically included in Hollenbeck and Klein's (1987) model, although it might be reflected in what they termed performance constraints. Time is an important coping resource (Lazarus & Folkman, 1984). Individuals feel more able to cope with situations or tasks if they have the time to do so. If an individual does not have enough time to achieve their goal, they may become frustrated and despondent. Locke and Latham (1990) suggested the very existence of goals implies pressure on the individual to perform, especially time pressure. Time pressures have been cited as one of the main causes of stress in the workplace (e.g., Cooper & Marshall, 1976; Warr, 1987). Time pressures may increase anxiety and stress (Locke & Latham, 1990) and may lead to the use of dysfunctional coping strategies.

This dimension is often subsumed under measures of support, and/or included in an item that measures resources in general. For example, Locke and Latham's (1984) questionnaire included an item that stated "this company provides sufficient resources (e.g., time, money, equipment, coworkers) to make goal setting work". One could easily have enough time but not enough money etc.; therefore in this research this dimension is measured separately in order to ascertain its unique influence on other dimensions.

Tools

Similar to the dimension of time, this dimension was not specifically included in Hollenbeck and Klein's (1987) model, although it might, like time, be reflected in what they termed performance constraints. The extent to which an individual feels they have sufficient equipment or tools to attain their goal is often measured under a

general heading of resources. It is proposed that a lack of equipment is an important factor in effective goal setting and should not be confused with a general assessment of resources, which might be confounded by perceptions of personal resources (e.g., ability).

Individuals can cope with situations or tasks if they perceive they have the resources to do so (Lazarus & Folkman, 1984). If, however, individuals' feel that they do not have the requisite resources, this could have a negative effect on well-being. Cooper, Sloan, and Williams (1988) suggested that a lack of resources can cause stress and lead to feelings of frustration. Thus, in addition to affecting success expectation this dimension may impact on affects.

Feedback/Measurability

Feedback was not included in Hollenbeck and Klein's (1987) model. Feedback plays a major role in theories based on the TOTE (Miller et al., 1960) model reviewed in the introduction to this thesis, which include goal theory (Locke & Latham, 1990). According to Locke et al. (1981), goals only enhance performance if they are accompanied by frequent and precise feedback or knowledge of results. Studies reviewed by Locke and Latham (1990) and Burton (1992) suggested that knowledge of results without goals has no effect on performance and goals without knowledge of results fails to affect performance (Locke et al., 1981). This suggests that goals and feedback are reciprocally dependent and both are necessary to improve performance.

According to Beggs (1993), the effects of feedback are divided into two distinct areas. Feedback is thought to cue the performer about the nature and size of any errors made and this information can be used to improve subsequent performance. Additionally, knowledge of results is concerned with motivating the recipient to increase their effort and/or persistence to reduce the discrepancy. These two

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consequences are respectively called the directive and incentive functions of knowledge of results (Payne & Hauty, 1955).

In their review of the literature, Locke and Latham (1990) suggested that "the most useful way to conceive of the relation between goals and feedback is as follows: Feedback tells people what is; goals tell them what is desirable. Feedback involves information; goals involve evaluation. Goals inform individuals as to what type or level of performance is to be attained so that they can direct and evaluate their actions and efforts accordingly. Feedback allows them to set reasonable goals and to track their performance in relation to their goals, so that adjustments in effort, direction, and even strategy can be made as needed. Goals and feedback can be considered a paradigm case of joint effect of motivation and cognition controlling action." (p. 197).

Austin and Vancouver (1996) noted the lack of dimensions related to the monitoring of goal progress and highlight the need for feedback in the goal setting process. It is suggested that unless progress towards a goal can be monitored then feedback cannot be given. The idea that progress towards goal attainment should be measurable is often promoted in popular acronyms such as SMART (specific, measurable, acceptable, realistic, and time bound). Therefore, measurability is proposed to be an essential goal characteristic, if only because it enhances the likelihood that the individual can receive feedback on their progress.

Control

Hollenbeck and Klein (1987) included "locus of control" as a personal factor that affects expectancy of goal attainment. A perception of control plays a major role in a number of the theories summarised in the introduction to this thesis. As far back as 1901, there has been recognition that the need to control is an inherent human condition (e.g., Groos, 1901); that humans possess a basic

motive or drive to exercise control over their environment (e.g., Williams, 1998). According to Skinner (1996), "both experimental and correlational studies have shown that across the life span, from earliest infancy to oldest age, individual differences in perceived control are related to a variety of positive outcomes, including health, achievement, optimism, persistence, motivation, coping, self-esteem, personal adjustment, and success and failure in a variety of life domains" (p. 550).

Control is a belief that one can determine one's own environment and/or bring about desired outcomes (Wallston, Wallston, Smith, & Dobbins, 1987). It is the extent to which an individual believes that they, rather than others, can effect changes (Skinner, 1992). Particularly in the sporting literature, controllability of one's goal is seen as one of the major parameters of effective goal setting (Beggs, 1990; Burton, 1992). Goals are often delineated into those that focus on the process and those that are focus on an outcome (product). When setting goals sports coaches have, in the past, advocated setting goals that are under the personal control of the individual, that is to say performance rather than outcome goals, as the latter were dependent on others people's performance relative to ones own. Martens (1987) suggested that it makes little sense for athletes to evaluate their achievements on the basis of attaining or not attaining goals that are not fully controlled by them. Burton (1992) suggested, however, that the type of goal an individual has should reflect personal predispositions or wishes. There is a distinction between goals that are seen as controllable and those that are not, and perceptions of controllability may be an important motivating or demotivating factor.

Terry (1993) suggested that control beliefs should be salient to the behaviour. In addition, Cohen (1988) suggested that perceptions of control in a specific domain are more likely to operate as a buffer in

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that domain than global perceptions of control. Therefore, rather than a generalised or global (a bias towards considering things are either controllable or uncontrollable), this research measures a perception of control with respect to the goal.

Teamwork

This dimension was not included in Hollenbeck and Klein's (1987) model. This dimension measures the extent to which individuals' perceive that they have to work with others in order to achieve their goal. Goals may be large or complex requiring the cooperation and involvement of others to achieve. The fact that an individual has to work with others to achieve their goal might have a bearing on the extent to which individuals' feel in control or believe they can achieve their goal (Ajzen & Madden, 1986). Group goals are confounded by group dynamics (Austin & Bobko, 1985). Group norms may affect individuals' motivation or commitment to a goal, for example in the case of systematic soldering or the restriction of output.

In addition to affecting the extent to which an individual feels in control or able to achieve their goal, the fact that they are relying on others to fulfil their role might have positive or negative effect on other factors. Burton (1992) suggested that compared to individual goals, team goals are neither personally flexible nor controllable, and that this results in fewer motivational benefits whilst ensuring more anxiety. West and Slater (1995) suggested working as a team can be a source of satisfaction, support, and learning but that it can also be a major source of pressure due to conflict with colleagues.

Divisibility

The dimension of divisibility was not included in Hollenbeck and Klein's (1987) model. This dimension measures the extent to which individuals' perceive that they can divide their goal into subgoals

According to Beggs (1990), an important property of a goal is that a large, possibly long-term goal, can be broken down into smaller, short term subgoals. Bandura (1997) suggested that complex activities can be made easier by breaking them down into a series of attainable subgoals, and that this helps to reduce the risk of self-demoralization through high aspirations. He suggested that effective goal systems embody a hierarchical structure in which proximal subgoals regulate motivation and action designated to fulfil loftier aspirations by providing frequent feedback that influences self-efficacy.

A perception that goals can be subdivided will probably result in an individual considering that seemingly impossible goals are achievable when taken step by step, which will motivate the individual to work towards their goal. The general importance of short range goals to motivation and behaviour has been recognised. Research (Bandura & Schunk; 1981; Bandura & Simon, 1977) supported the effectiveness of proximal versus distal goals. Sports researchers such as Beggs (1990) suggested that people respond better when their goals are apparently closer to hand than when they are distant, future goals. In addition, Burton (1992) reported that the impact of long term goals depended on establishing short term goals to serve as intermediate steps in the achievement process (Hall & Bryne, 1988; Locke, Cartledge, & Knerr, 1970).

In a paper exploring the application of goal setting to the sporting arena, Locke and Latham (1985) suggested that using short term goals plus long term goals will lead to better performance than using long term goals alone. Later, however, Locke and Latham (1990), following an extensive review of the literature, expressed reservations concerning the effectiveness of short term goals, suggesting that they were facilitative only for certain tasks. It is noted that their review did include studies that compared proximal goals of 2 minutes with distal goals of 22 minutes (Manderlink & Harackiewicz, 1984) and

these tasks were laboratory based. In an applied setting it is envisaged that individuals will have tasks that may be broken down into smaller tasks. It is suggested that establishing subgoals facilitates attainment of the main objective and the idea of breaking down tasks, which focuses attention in the short term, may be an essential characteristic of a goal in that it affects the extent to which an individual feels they can achieve their goal.

Options

This dimension was not included in Hollenbeck and Klein's (1987) model. This dimension measures the extent to which individuals' believe they can achieve their goals in a number of different ways. According to Austin and Vancouver (1996), goals display the property of equifinality, meaning that they may be achieved through multiple means. Brandtstadter (1992) suggested that individuals should be aware and willing to use a variety of strategies in order to deal with a situation. He suggested that when faced with uncontrollable events, individuals with a strong sense of personal control and self-efficacy might have difficulty in adjusting their goals. However, an individual's ability to make alternative interpretations, their willingness to explore alternative processes and adjust reference norms, enhances well-being. Thus, although it is suggested that this dimension may affect individuals' success expectation, in addition this dimension may impact on affects.

Fixedness/Flexibility

These two dimensions were not included in Hollenbeck and Klein's (1987) model. These two dimensions measure the extent to which an individual believes their goal is adjustable and their willingness to do so. Klein et al. (1999) suggested that high levels of goal commitment may not always be desirable; that relentless goal striving may be detrimental to individuals' well-being by causing stress, anxiety, or other health risks.

It is suggested that whilst working towards a goal it might become obvious that it has become impossible to achieve. It may be facilitative if a goal is mutable; that it is possible to alter the goal to reflect one's progress towards it. According to Brandtstadter (1992), if a goal becomes unattainable, it may be essential for future performance and well-being that an individual is prepared to alter their goal. He suggested that "the capability or readiness to disengage from thwarted developmental origins and to flexibly revise and readjust one's developmental goals and life design may be an important factor that serves to diminish the impact of aversive and stressful experiences and to reduce the individuals' vulnerability to depression" (p. 138). He compared tenacious individuals who cling to their goals and commitments even in the face of obstacles or under high risk of failure with individuals who disengage themselves from barren commitments, and try to see the best in difficult situations. Those who managed the latter showed consistent and positive relationships with indicators of successful development, such as optimism, life satisfaction, absence of depressive tendencies, and greater resilience in stressful life situations.

If goals are seen as flexible this may give individuals the confidence to strive for difficult goals, perhaps knowing that if something goes wrong that is not within their control, (e.g., a piece of machinery breaks down), then their goals can be altered to reflect these new developments. This willingness (flexibility) to alter or adjust one's goal may be contingent on the belief that one can change the goal (fixedness), or it may be that a perception of the fixedness of one's goal is contingent on one's willingness to change it. It is considered important at this stage to measure both one's willingness to change one's goal and the perception that a goal can be changed.

Aims

The aim of this first study was to design a questionnaire to measure goal perceptions. The putative dimensions that are measured in this first study have been identified. The next step was to write the items for each of the dimensions, and through a series of confirmatory factor analysis identify items that are strong and unambiguous indicators of their intended construct.

The correlations among scales would be examined to check for consistency with theoretical predictions. A simplistic model based primarily on Hollenbeck and Klein's (1987) model is proposed. The relationships between dimensions are hypothesised to broadly follow a value expectancy model. In alphabetical order, competition, conflict, enjoyment, importance to others, origin, publicness, and specificity are proposed to affect perceptions of value. Ability, complexity, control, difficulty, divisibility, effort, feedback, fixedness, flexibility, measurability, options, progress, support, teamwork, time, and tools are hypothesised to affect perceptions of success expectation. Value and success expectation are proposed to affect perceptions of commitment.

Method

Previous Research by the Author

The initial development of the goal perceptions questionnaire was completed as part of the author's undergraduate project. This project is briefly explained below as it forms the basis for further development of the questionnaire.

A 60 item pilot questionnaire was designed to measure 10 goal dimensions (six items per scale). The putative goal dimensions were commitment, control, difficulty, divisibility, enjoyment, measurability, origin, specificity, support, and value. The questionnaire was given to three independent experts who were asked

to examine the items for construct validity. The questionnaire was amended to reflect their comments and was then completed by 180 students and local residents. Ten items had a skewed distribution and deleted from further analysis. Following an initial exploratory factor analysis, 19 items which were either ambiguous or did not load 0.5 or above on any factor were also deleted. The remaining items were subjected to a further factor analysis. Eleven factors were obtained. Eight of the factors suggested scales that were then subjected to analysis for internal consistency. Of the eight scales all but one had Cronbach's alpha greater than 0.7. The seven scales that had acceptable internal consistency were labelled: Commitment, Difficulty, Divisibility, Enjoyment, Origin, Specificity, and Support.

Designing the Scale

For the present study 150 questions, 6 for each of the 25 putative, dimensions were compiled. Items from the previous attempt that loaded on their expected factors and whose respective scales had acceptable internal consistency were used. New items were written with reference to previous scales and research, by "brainstorming", and by systematic reference to various thesauri and dictionaries in order to identify appropriate synonyms and antonyms. This process involved the author and one expert colleague.

For each dimension an attempt was made to write three items which encapsulated the presence of a construct, and three items which suggested the opposite or lack of the construct, (without the inappropriate use of 'no' or 'not'), e.g., "This goal is difficult" and "This goal is easy". Writing questions that explored the opposite or absence of a number of dimensions (namely competition, effort, flexibility, options, publicness, and teamwork) was found to be difficult, and therefore, six items that represented only the presence of the construct were constructed for these six dimensions.

Items were written in the form of a statement and respondents were invited to agree or disagree with these on a 5 point Likert-type scale, ranging from strongly agree to strongly disagree.

The draft questionnaire was presented to two other expert colleagues and their advice was sought concerning the dimensions and items within the dimensions. Their comments and advice were incorporated. The questionnaire was piloted on sixteen post and undergraduates. Participants were asked for their opinions and comments on the questionnaire and asked to identify any items that they considered were ambiguous or jargonistic. The Personnel Director, Personnel Manager and the Training Manager of the company involved in the study were also asked to peruse the questionnaire, primarily to ensure that employees of the company would relate to and understand the instructions, and also to confirm that the items were clear and applicable.

An introduction and instructions for completion of the questionnaire were written with direct reference to the target sample, and can be seen at Appendix A.

Participants

Questionnaires were posted (with monthly wage advices) to 850 employees of the training arm of a nationwide recruitment and training company. The company's main purpose is the recruitment, placement, and training of school leavers. The company has approximately 107 offices nationwide. Responses were received from 111, which is approximately a 13% return rate. Respondents' mean age was 37.40 years ($SD = 10.0$) (11 respondents did not indicate their age). There were 28 male and 77 female respondents (6 respondents did not indicate their gender).

All employees have a quarterly career development review (QCDR). During these interviews employees are encouraged to set a number of goals. Their progress towards these goals is monitored and recorded at their next QCDR. Respondents were instructed to identify a particular goal from their QCDR and to indicate how long they considered it would take to achieve. They then completed the questionnaire with reference to that goal.

The company had recently been awarded the British Kitemark "Investors in People". One of the criteria for this Kitemark was the implementation of a formal goal setting programme. The company's motivation for participating in this research was that this research might provide information that would help them to evaluate their current practices. Employees were made aware, by management team meetings, of this research, but the letter sent out with all questionnaires stressed that this research was independent, and responses anonymous. Respondents were instructed to return the questionnaire directly to Bangor University and an effort was made to emphasise that no one from the company would have access to individuals' completed questionnaire. A copy of this letter can be found at Appendix B.

Analysis

In the first instance, it was necessary to establish whether the items formed satisfactory scales. To that end the data were subjected to a series of confirmatory factor analyses using LISREL 8 (Jöreskog & Sörbom, 1993) with maximum likelihood estimation. This involved testing the scales one at a time in single factor models and then pairing each scale with every other scale in two factor models. Such a sequential approach to model testing is advocated by Jöreskog (1993) and has been used previously in questionnaire development (e.g., Markland & Ingledew, 1997; Mullen, Markland, & Ingledew, 1997).

LISREL provides a selection of fit statistics that are used to assess the appropriateness of the model. Chi-square measures the difference or distance between the sample covariance matrix and the fitted (model) covariances. Chi-square is a badness of fit measure in the sense that a small chi-square corresponds to a good fit and a large chi-square to a bad fit. Chi-square is a conservative statistic and often fails to reach significance particularly if large sample sizes are used. Root mean square error of approximation (RMSEA) assesses how well a model with unknown but optimally chosen parameter values fits the population covariance matrix if it were available, per degree of freedom. Browne and Cudeck (1993) suggested that values for RMSEA indicates a good fit at approximately 0.05 or less, values of 0.08 or less would indicate a reasonable error of approximation and that they would not use a model with RMSEA greater than 0.10. LISREL also provides a significance test for RMSEA < .05. Residuals provide a discrepancy score between the observed and fitted covariance. Assessment of the standardised residuals will give an indication of problem items and model misspecifications. Large positive residuals indicate that the model underestimates the covariance between the two variables. Large negative residuals indicate that the model overestimates the covariance between the variables. The standardised root mean square residual (SRMR) provides an overall discrepancy score which ranges from +1 to -1, with smaller values suggesting less discrepancy between the fitted and observed covariances. The goodness of fit index (GFI) is another measure of absolute fit and indexes the relative amount of the observed variance and covariance accounted for by the model, and has been likened to R^2 in regression analysis (Hoyle & Panter, 1995). The comparative fit index (CFI) compares the model specified with a baseline or null model indicating no mutual influences among variables (Bentler, 1990). With a range of 0 to 1 larger values indicate greater improvement of the model in question over the alternative in reproducing the observed covariances. A commonly

agreed cut off value for both fit indexes is 0.90 (Hoyle & Panter, 1995). Modification indices suggest alternative paths for the model that reflects the relationships within the data, which if incorporated in the model will provide a better fit. Modifications should not be made unless there is theoretical reason for doing so. When pairing scales, modifications for factor loadings provide indications of ambiguous items.

Coefficient alphas were calculated for the final scales. Scale means were calculated and a correlation matrix used to explore the relationships between dimensions.

Results

Data reduction

Following an examination of the frequency distributions, 19 items were deleted from further analysis. Three criteria were used for deleting items: if an item had a skewness greater than 1.5; if it had no responses in at least one of the five response categories; or if it had only one response in two or more of the five response categories. The questionnaire used in this study can be found at Appendix A. Four of the six items (59, 125, 133, and 147) written to assess whether individuals considered their goals specific were found to have a skewed response, with the majority suggesting their goal was specific. Four of the six items (2, 55, 114, and 145) written to measure whether individuals valued their goal had a skewed response, with the majority of respondents suggesting that they valued their goal. Item 19 had a skewed response with the majority agreeing with the statement which asked them to consider whether they felt that others thought their (the individual's) goal was of value. Item 21 asked individuals to agree or disagree with "This goal is unchallenging" and the majority disagreed strongly with this statement. Item 30 assessed whether individuals considered their goal measurable and had a skewed response with the majority agreeing with this item. One of

the six items written to measure perceptions of teamwork (item 36 "It is necessary to work with others to achieve this goal") had a skewed response with the majority agreeing with this item. Two items (47 and 68) written to assess individuals' perceptions of the amount of effort required to achieve their goal had skewed responses, with the majority agreeing with the sentiment that their goal required a great deal of effort in order to achieve it. Two items (54 and 66) written to measure individuals' perceptions of their abilities in respect of their goal had a skewed response with the majority agreeing with the concept that they had the requisite skills required to achieve their goal. The three positively worded items (45, 83, and 103) written to assess individuals' commitment to their goal displayed a skewed response. The majority of respondents agreed with the statements that suggested that they were committed or intended to achieve their goal.

Single Factor Confirmatory Factor Analyses

A series of single factor confirmatory factor analyses were conducted for each of the dimensions apart from Value and Specificity, which had only two items remaining following deletion of skewed items. Twenty three separate models were tested, one for each putative scale.

The minimum requirement for fit for the single scales, for this study, was that the p-value for RMSEA should be $p = 0.05$ or greater. Table 1 details the single scale confirmatory factor analyses for the 23 scales. The steps to achieving an adequately fitting model are provided in the table. The item numbers and their loadings on the factors are provided. Chi-square, RMSEA and their respective p-values are provided for each model as is the SRMR for each model.

If the model did not meet the criteria, the standardised residuals were considered. Large positive or negative residuals (greater than plus or minus 2.00) suggest that the model under or overestimates the

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covariance between the variables. The author tried to make sense of the residuals in terms of the wording of the items. It was found that the residuals for a number of the dimensions seemed to follow a similar pattern suggesting that those items written to measure the opposite or absence of a particular construct did not sit well with the other items (written to measure the presence of the construct). Two factor models for some of the single scales were attempted in order to allow for the relationships between the negative items and the relationships between the positive items. In such cases the 95% confidence intervals (correlation $\pm$ 1.96) for the correlations between factors should include the value 1.0 if the two factors truly form a homogeneous scale. Where that was not the case and where it did not seem possible to make sense of the residuals in relation to the wording of the items, a pragmatic approach was adopted. Pairs of items forming large residuals were deleted one item at a time and the effect on fit observed.

Items were deleted from each scale until the scale met the criteria for fit (*p*-value for RMSEA should be p = 0.05 or greater). For the final models (see Appendix C), all but three scales (Ability, Commitment, and Success Expectation) had a RMSEA of .10 or less. All but one scale (Commitment) had CFI of greater than .90. All scales had GFI of .90 or greater. All but one scale (Commitment) had SRMR of .06 or less. All scales had p value for chi-square of 0.01 or greater.

Table 1.
Single Confirmatory Factor Analyses of Scales

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
1a	Ability $n = 109$	14	0.30		4.97 0.08	0.12 0.14	0.05	This model fitted adequately.
		39	0.60					
		79	-0.79					
		115	0.43					
2a	Commitment $n = 109$	16	0.52		7.15 0.03	0.16 0.06	0.11	In this model, the factor loadings were of necessity constrained to be equal. Given the highly constrained nature of the model, the fit was deemed adequate.
		20	0.48					
		35	0.65					
3a	Competition $n = 108$	4	0.68		31.18 0.00	0.15 0.00	0.03	The residuals indicated that the model underestimated the relationship between items 15 and 57. Therefore, items were deleted one at a time.
		15	0.80					
		57	0.84					
		106	0.92					
		140	0.93					
		149	0.88					
3b	Competition	4	0.68		10.06 0.07	0.10 0.16	0.02	Deleting item 15 gave an adequate fit. Next, item 57 was deleted instead.
		57	0.82					
		106	0.93					
		140	0.94					
		149	0.88					
3c	Competition	4	0.68		2.89 0.72	0.00 0.82	0.01	This gave an even better fit.
		15	0.77					
		106	0.92					
		140	0.95					
		149	0.88					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 / $p\,(\chi^2)$	RMSEA / p (RMSEA <.05)	SRMR	Comment And Next Step
4a	Complexity n = 108	9	0.66		31.82	0.15	0.09	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		12	0.69		0.00	0.00		
		41	0.70					
		75	-0.44					
		135	-0.31					
		142	-0.62					
4b	Complexity	9	0.71(1)	-0.67	18.91	0.11	0.07	This model fitted adequately with reference to the fit statistics. However, the 95% confidence interval did not include the value 1.0. A pragmatic approach was therefore adopted with the items forming the largest residual being deleted one at a time.
		12	0.74(1)	(0.10)	0.02	0.06		
		41	0.67(1)					
		75	0.53(2)					
		135	0.46(2)					
		142	0.76(2)					
4c	Complexity	9	-0.52		18.63	0.16	0.08	Items 9 and 12 formed the largest residual. By deleting item 12 the fit improved from the original model.
		41	-0.67		0.00	0.01		
		75	0.49					
		135	0.38					
		142	0.73					
4e	Complexity	12	-0.56		10.31	0.10	0.06	By deleting item 9 the model fitted adequately.
		41	-0.66		0.07	0.15		
		75	0.51					
		135	0.44					
		142	0.71					
5a	Conflict n = 109	24	-0.46		38.76	0.17	0.07	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		38	-0.62		0.00	0.00		
		50	0.82					
		69	0.91					
		100	0.77					
		132	-0.80					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
5b	Conflict	24	0.52(1)	-0.86	25.59	0.14	0.05	The residuals still suggested that the model underestimated the relationship between items 24 and 38. Therefore, a single factor model was specified and items 24 and 38 were deleted one at a time.
		38	0.70(1)	(0.05)	0.00	0.01		
		50	0.83(2)					
		69	0.93(2)					
		100	0.76(2)					
		132	0.87(1)					
5c	Conflict	38	-0.60		15.08	0.14	0.04	Deleting item 24 improved the fit but not to an adequate level. Next, item 38 was deleted.
		50	0.82		0.01	0.03		
		69	0.91					
		100	0.77					
		132	-0.79					
5d	Conflict	24	-0.44		10.33	0.10	0.04	This model fitted adequately.
		50	0.82		0.07	0.15		
		69	0.94					
		100	0.75					
		132	-0.77					
6a	Control $n = 109$	49	-0.77		29.83	0.15	0.04	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate factor.
		60	-0.82		0.00	0.00		
		104	0.72					
		111	-0.33					
		134	0.98					
		139	0.96					
6b	Control	49	0.84(1)	-0.84	10.03	0.05	0.03	The fit was adequate. However, the 95% confidence interval did not include the value 1.0. A pragmatic approach was therefore adopted with the items forming the largest residual being deleted one at a time.
		60	0.88(1)	(0.05)	0.26	0.45		
		104	0.66(2)					
		111	0.35(1)					
		134	0.88(2)					
		139	0.88(2)					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p\,(\chi^2)$	RMSEA $p\,(\text{RMSEA} <.05)$	SRMR	Comment And Next Step
6c	Control	49	0.82		5.86	0.04	0.03	Items 134 and 139 formed the largest residual. By deleting item 134 the fit improved from the single factor model.
		60	0.87		0.32	0.47		
		104	-0.69					
		111	0.35					
		139	-0.73					
6d	Control	49	0.83		1.76	0.00	0.02	Deleting item 139 provided an even better fit that was considered adequate.
		60	0.88		0.88	0.93		
		104	-0.67					
		111	0.35					
		134	-0.75					
7a	Difficulty $n = 110$	74	-0.58		10.41	0.10	0.05	This model fitted adequately.
		90	0.87		0.06	0.14		
		102	-0.62					
		105	0.86					
		110	0.91					
8a	Divisibility $n = 109$	13	-0.53		25.15	0.13	0.07	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		17	-0.40		0.00	0.02		
		63	0.82					
		65	-0.71					
		70	0.80					
		141	0.78					
8b	Divisibility	13	0.55(2)	-0.80	15.08	0.09	0.05	This model fitted adequately with reference to the fit statistics. However, the 95% confidence interval did not include the value 1.0. A more pragmatic approach was adopted with the items forming the largest residual being deleted one at a time.
		17	0.53(2)	(0.07)	0.06	0.16		
		63	0.84(1)					
		65	0.83(2)					
		70	0.82(1)					
		141	0.77(1)					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
8d	Divisibility	13	-0.51		12.63	0.12	0.06	Items 17 and 65 formed the largest residual. By deleting item 65, the fit improved from the single factor model.
		17	-0.34		0.03	0.08		
		63	0.84					
		70	0.81					
		141	0.77					
8e	Divisibility	13	-0.51		5.78	0.04	0.03	Deleting item 17 provided an even better fit which was considered adequate.
		63	0.84		0.33	0.48		
		65	-0.69					
		70	0.81					
		141	0.78					
9	Effort	42	0.60		1.90	0.00	0.02	This model fitted adequately.
	n = 109	122	0.96		0.39	0.48		
		129	0.89					
		136	0.84					
10a	Enjoyment	26	-0.76		31.40	0.15	0.05	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
	n = 109	82	0.73		0.00	0.00		
		96	0.73					
		107	-0.77					
		121	-0.79					
		143	0.87					
10b	Enjoyment	26	0.78(2)	-0.87	13.16	0.08	0.03	This model fitted adequately with reference to the fit statistics. However, the 95% confidence interval did not include the value 1.0. A pragmatic approach was adopted with items forming the largest residual being deleted one at a time.
		82	0.77(1)	(0.04)	0.11	0.23		
		96	0.76(1)					
		107	0.81(2)					
		121	0.84(2)					
		143	0.90(1)					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
10c	Enjoyment	26	0.78		16.84	0.15	0.04	Items 82 and 96 formed the largest residual. By deleting item 96, the fit improved from the original model. Next item 82 was deleted.
		82	-0.69		0.00	0.02		
		107	0.80					
		121	0.81					
		143	-0.85					
10e	Enjoyment	26	0.78		10.07	0.10	0.03	By deleting item 82 the model fitted adequately.
		96	-0.69		0.07	0.16		
		107	0.79					
		121	0.83					
		143	-0.84					
11a	Feedback $n = 108$	23	0.59		13.35	0.07	0.03	This model fitted adequately.
		77	0.88		0.15	0.31		
		93	0.87					
		119	-0.80					
		126	0.93					
		144	-0.58					
12a	Fixedness $n = 110$	10	0.90		84.74	0.28	0.13	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		25	0.83		0.00	0.00		
		53	0.87					
		87	-0.37					
		91	-0.64					
		95	-0.53					
12b	Fixedness	10	0.92(1)	-0.63	17.01	0.10	0.04	This model fitted adequately with reference to the fit statistics. However, the 95% confidence interval did not include the value 1.0. A more pragmatic approach was therefore adopted with the items forming the largest residual being deleted one at a time.
		25	0.84(1)	(0.07)	0.03	0.10		
		53	0.86(1)					
		87	0.61(2)					
		91	0.88(2)					
		95	0.79(2)					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
12c	Fixedness	10	0.90		30.44	0.22	0.10	Items 91 and 95 formed the largest residual. Deleting item 91 did not provide an adequate fit. Next item 95 was deleted.
		25	0.85		0.00	0.00		
		53	0.86					
		87	-0.33					
		95	-0.48					
12d	Fixedness	10	0.92		30.34	0.21	0.09	Deleting item 95 did not provide an adequate fit and therefore both items were deleted.
		25	0.84		0.00	0.00		
		53	0.86					
		87	-0.33					
		91	-0.60					
12e	Fixedness	10	0.91		0.36	0.00	0.01	Deleting both items provide an adequate fit, However, item 87 (the remaining negatively worded item) had a low loading.
		25	0.85		0.84	0.87		
		53	0.85					
		87	-0.30					
13a	Flexibility n = 103	3	0.68		38.49	0.17	0.05	The fit was not adequate. There was a high positive residual between items 109 and 116. The possibility that individuals differentiated between changing their goal (for another one) and altering their goal was considered. Therefore, items 31, 109, and 116 were allowed to load on their own factor.
		31	0.76		0.00	0.00		
		40	0.67					
		97	0.81					
		109	0.84					
		116	0.92					
13b	Flexibility	3	0.73(1)	0.89 (0.04)	26.95	0.15	0.05	The fit was not adequate. Therefore, a single factor was specified and items 109 and 116 were deleted one at a time.
		31	0.74(2)		0.00	0.01		
		40	0.70(1)					
		97	0.86(1)					
		109	0.86(2)					
		116	0.95(2)					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
13c	Flexibility	3	0.71		10.64	0.10	0.03	Deleting item 109 gave an adequate fit. Next, item
		31	0.80		0.06	0.14		116 was deleted instead.
		40	0.73					
		97	0.83					
		116	0.85					
13e	Flexibility	3	0.73		14.04	0.13	0.04	The fit was not so good.
		31	0.78		0.02	0.05		
		40	0.72					
		97	0.85					
		109	0.75					
14a	Importance To Others $n = 110$	1	-0.39		48.36	0.29	0.13	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		46	-0.58		0.00	0.00		
		64	0.66					
		67	0.69					
		99	0.54					
14b	Importance To Others	1	0.50(1)	-0.36	7.21	0.09	0.06	Low correlation between factors. Improper solution. Therefore items 1 and 46 were deleted one at a time.
		46	1.22(1)	(0.13)	0.13	0.22		
		64	0.77(2)					
		67	0.62(2)					
		99	0.63(2)					
14c	Importance To Others	46	-0.44		4.11	0.10	0.04	Deleting item 1 resulted in an adequate fit. Next item 46 was deleted instead.
		64	0.76		0.13	0.20		
		67	0.63					
		99	0.62					
14d	Importance To Others	1	-0.17		6.87	0.15	0.06	The fit was not as good.
		64	0.78		0.03	0.06		
		67	0.61					
		99	0.63					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
15a	Measurability n = 109	51	-0.76		5.39 0.37	0.03 0.52	0.03	This model fitted adequately.
		88	0.71					
		101	0.80					
		118	0.86					
		127	-0.68					
16a	Options n = 108	5	0.64		10.02 0.35	0.03 0.55	0.03	This model fitted adequately.
		8	0.78					
		18	0.83					
		32	0.82					
		108	0.82					
		117	0.83					
17a	Origin n = 109	7	0.85		34.97 0.00	0.16 0.00	0.06	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		28	0.78					
		71	0.93					
		76	-0.70					
		92	-0.62					
		130	-0.69					
17b	Origin	7	0.86(1)	-0.90	28.32 0.00	0.15 0.00	0.05	The residuals suggested that the relationship between items 92 and 130 was still underestimated. The wording of these items (pressurised and imposed) seemed more extreme than that of the other items that simply asked whether goals had been selected or chosen by the individual. Items 92 and 130 were allowed to load on their own factor.
		28	0.78(1)					
		71	0.94(1)					
		76	0.72(2)					
		92	0.68(2)					
		130	0.77(2)					
17c	Origin	7	0.86(1)	-0.80	20.45 0.01	0.12 0.04	0.05	The fit improved but was not adequate. Therefore a single factor model was specified and items 92 and 130 were deleted one at a time.
		28	0.77(1)					
		71	0.94(1)					
		76	-0.70(1)					
		92	0.74(2)					
		130	0.84(2)					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
17d	Origin	7	0.86		13.53	0.12	0.04	Deleting item 92 improved the fit to an acceptable level. Next, item 130 was deleted instead.
		28	0.76		0.02	0.06		
		71	0.94					
		76	-0.70					
		130	-0.67					
17e	Origin	7	0.86		14.22	0.13	0.04	This fit was almost acceptable. Finally, both items 92 and 130 were deleted, which seemed reasonable because of the extreme wording of these two items.
		28	0.77		0.01	0.05		
		71	0.94					
		76	-0.70					
		92	-0.60					
17f	Origin	7	0.87		2.31	0.04	0.02	This model fitted adequately.
		28	0.75		0.32	0.41		
		71	0.95					
		76	-0.70					
18a	Publicness n = 109	34	0.54		16.83	0.09	0.03	This model fitted adequately.
		81	0.91		0.05	0.15		
		84	0.81					
		94	0.91					
		123	0.92					
		146	0.83					
19a	Specificity	11						With only two items remaining following deletion of skewed items confirmatory factor analysis was not conducted.
		86						
20a	Success Expectation n = 109	27	0.71		25.91	0.13	0.05	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		52	0.82		0.00	0.01		
		58	0.68					
		98	-0.83					
		128	-0.80					
		150	-0.94					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
20b	Success Expectation	27	0.77(1)	-0.89 (0.04)	6.53 0.59	0.0 0.75	0.02	This model fitted adequately with reference to the fit statistics. However, the 95% confidence interval did not include the value 1.0. Therefore a more pragmatic approach was adopted with the items forming the largest residual being deleted one at a time.
		52	0.88(1)					
		58	0.73(1)					
		98	0.84(2)					
		128	0.79(2)					
		150	0.96(2)					
20c	Success Expectation	27	0.76		13.85 0.02	0.13 0.05	0.04	Items 98 and 150 formed the largest residual. By deleting item 150, the fit improved from the original model. Next item 98 was deleted.
		52	0.86					
		58	0.73					
		98	-0.76					
		128	-0.77					
20d	Success Expectation	27	0.75		12.43 0.03	0.12 0.08	0.03	By deleting item 98 the fit was considered adequate.
		52	0.86					
		58	0.70					
		128	-0.79					
		150	-0.90					
21a	Support $n = 109$	6	-0.44		17.34 0.04	0.09 0.13	0.06	This model fitted adequately.
		73	0.77					
		89	-0.62					
		113	0.75					
		120	-0.35					
		137	0.55					
22a	Teamwork $n = 109$	22	0.72		38.84 0.00	0.25 0.00	0.06	The residuals suggested that the model overestimated the relationship between the concepts of reliance and teamwork. It was originally considered that reliance and teamwork were separate concepts but it was difficult to differentiate between them when writing items. Therefore, items 61 and 80 were made to load on a separate factor.
		44	0.89					
		61	0.79					
		80	0.74					
		85	0.83					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p\,(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
22b	Teamwork	22	0.74(1)	0.83	20.11 0.00	0.19 0.00	0.04	The fit improved, but not to an adequate level. Therefore, a single factor model was specified and items 61 and 80 were deleted one at a time.
		44	0.93(1)					
		61	0.89(2)					
		80	0.81(2)					
		85	0.82(1)					
22c	Teamwork	22	0.72		11.91 0.01	0.21 0.01	0.04	Deleting item 61 did not give an adequate fit. Next, item 80 was deleted instead.
		44	0.90					
		80	0.69					
		85	0.85					
22d	Teamwork	22	0.74		0.15 0.93	0.00 0.94	0.01	This model fitted adequately.
		44	0.94					
		61	0.74					
		85	0.80					
23a	Time n = 108	33	-0.59		30.58 0.00	0.15 0.00	0.05	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		37	0.78					
		48	-0.75					
		56	-0.87					
		62	0.81					
		131	0.65					
23b	Time	33	0.59(1)	-0.85 (0.04)	13.30 0.10	0.08 0.23	0.04	This model fitted adequately with reference to the fit statistics. However, the 95% confidence interval did not include the value 1.0. A pragmatic approach was adopted with the items forming the largest residual being deleted one at a time. Items 48 and 56 formed the largest residual.
		37	0.84(2)					
		48	0.78(1)					
		56	0.93(1)					
		62	0.86(2)					
		131	0.65(2)					
23c	Time	33	-0.56		12.56 0.03	0.12 0.08	0.05	Deleting item 56 improved the fit from the original model.
		37	0.83					
		48	-0.66					
		62	0.86					
		131	0.64					

No.	Dimension	Item No.	Loading	FCr. (SE)	χ^2 $p(\chi^2)$	RMSEA p (RMSEA <.05)	SRMR	Comment And Next Step
23d	Time	33	-0.58		10.80 0.06	0.10 0.13	0.04	Deleting item 48 proved a better fit that was considered adequate.
		37	0.83					
		56	-0.81					
		62	0.84					
		131	0.68					
24a	Tools n = 109	29	0.85		19.23 0.02	0.10 0.09	0.03	The residuals suggested that the model underestimated the relationship between the negatively worded items and therefore these items were made to load on a separate but correlated factor.
		43	-0.74					
		72	0.79					
		112	-0.75					
		124	-0.81					
		138	0.73					
24b	Tools	29	0.88(1)	-0.92 (0.04)	12.71 0.12	0.08 0.26	0.03	This model fitted adequately and the 95% confidence interval did include the value 1.0. It was therefore considered to be a single factor.
		43	0.75(2)					
		72	0.81(1)					
		112	0.77(2)					
		124	0.84(2)					
		138	0.72(1)					
25	Value	78						With only two items remaining following deletion of skewed items confirmatory factor analysis was not conducted
		148						

Note: FCr = Factor Correlations; SE = Standard Errors; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardised Root Mean Residual

Paired Confirmatory Factor Analyses

As part of the sequential approach to model testing advocated by Jöreskog (1993), each of the 23 scales were paired with every other scale. Appendix C details the fit statistics for all final single factor models and paired models. Of the 253 pairings, 44 did not meet the minimum requirement for fit (p value for RMSEA < 0.05). Of the remaining 209 models, none had a RMSEA value of greater than 0.10. Thirteen of the 209 models had a chi-square p-value of less than 0.01. CFI ranged from 0.88 to 1.00 (only three were less than 0.90). GFI ranged from 0.89 to 1.00 (10 were less than 0.90). Only 6 of the 209 models had SRMR of .10 or greater.

Confidence intervals for the correlation between factors included the value 1.0 in two cases (Ability and Control, and Commitment and Enjoyment). Although neither of these pairings provided adequate fit statistics, the high correlation between factors should be noted.

Problem Scales

Models that included the scales of Ability, Control, Difficulty, Enjoyment, and Fixedness did not meet the minimum criteria for fit on six or more occasions, suggesting a systematic problem. These models were carefully studied to identify why this might be the case.

Ability

Ability fitted adequately with only 13 of the other 22 scales. In the single factor model Ability had two particularly low loading items both of which were negatively worded items. (14 - I feel incompetent with respect to this goal, and 115 - I feel inadequate with respect to this goal) the latter of which showed a propensity to load on the other scale (with which Ability was paired) or form large residuals with items from the other scale. However, the modification indices for lambda x did not reflect a consistent problem.

Control

Control fitted adequately with 16 of the other 22 scales. In most of the models that did not fit there were large modification indices for lambda x for item 111 ("as regards this goal, I feel I can really make things happen"). In the single factor model, this item had a particularly low loading (0.35).

Difficulty

Difficulty fitted with 14 of the other 22 scales. In the pairings no one item provided consistent modification indices for lambda-x, and like the Enjoyment scale, large standardised residuals (greater than 2.00) were found for the two negatively worded items suggesting a problem internal to the scale (homogeneity) rather than one of item ambiguity.

Enjoyment

Enjoyment fitted with only 11 of the other 22 scales. In the pairings no one item provided consistent modifications indices for lambda-x. The two negatively worded items contained in this scale repeatedly formed large residuals with each other, suggesting a problem internal to the scale (homogeneity) rather than one of item ambiguity.

Fixedness

Fixedness fitted adequately with 16 of the 22 scales. The single scale of Fixedness had one negatively worded item remaining after the initial single confirmatory factor analysis. This item was particularly low loading (-0.30) on the single factor model. When Fixedness was paired with other scales this negatively worded item showed a propensity to load on the other scales that were paired with Fixedness.

Other scales which did not fit with others such as Time, Tools, Support, and Feedback included negatively worded items. These items tended to form large residuals within their own scale, and/or if they were low loading items showing a propensity to load on the other

scale. Table 2 details the items remaining for each scale following

the confirmatory factor analysis.

Table 2.
Items Remaining For Each Scale Following Confirmatory Factor Analyses

Scale	No.	Items
Ability	*14	I feel incompetent with respect to this goal.
	*39	This goal might exceed my current abilities.
	79	I have the necessary expertise to achieve this goal.
	*115	I feel inadequate with respect to this goal.
Commitment	*16	I feel half–hearted about working towards this goal.
	*20	I feel unenthusiastic about this goal.
	*35	I feel indifferent about this goal.
Competition	4	I have to outdo others to achieve this goal.
	15	To achieve this goal, I have to compete with others.
	106	To reach this goal I must do better than others.
	140	I have to outperform others to achieve this goal.
	149	To achieve this goal my performance has to be superior to others.
Complexity	*12	This goal is simple.
	*41	This is an uncomplicated goal.
	75	This goal requires detailed planning.
	135	This goal needs a good strategy.
	142	This is a complex goal.
Conflict	*24	This goal is compatible with my other goals.
	50	This goal seems to contradict the purpose of my other goals.
	69	This goal clashes with my other goals.
	100	This goal conflicts with some of my other goals.
	*132	This goal fits in well with my other goals.
Control	49	As regards this goal, I feel in command of the situation.
	60	I feel in control of this goal.
	*104	I feel helpless in relation to this goal.
	111	As regards this goal, I feel I can really make things happen.
	*134	This goal feels out of my control.
Difficulty	*74	This goal is undemanding.
	90	This is a hard goal.
	*102	This goal is easy.
	105	This goal is difficult.
	110	This is a tough goal.
Divisibility	*13	It is difficult to split this goal into more manageable chunks.
	63	This goal can be divided into smaller parts.
	*65	I find it hard to see how this goal could be broken down.
	70	I can break this goal down into sub–goals.
	141	This goal can be simplified by splitting it up.
Effort	42	I will need to strive hard to achieve this goal.
	122	I will need to stretch myself to achieve this goal.
	129	I will have to push myself to achieve this goal.
	136	I will have to exert myself to achieve this goal.
Enjoyment	26	I enjoy working towards this goal.
	*96	Working towards this goal feels like a chore.
	107	I get a lot of satisfaction out of pursuing this goal.
	121	Pursuing this goal gives me a lot of pleasure.
	*143	I dislike having to work towards this goal.
Feedback	23	I am kept advised of how I am doing on this goal.
	77	I get feedback on the progress I am making towards this goal.
	93	I am kept informed about my progress towards this goal.
	*119	People fail to tell me how I am progressing in relation to this goal.
	126	I am kept in the picture about my progress towards this goal.
	*144	I am kept in the dark about my progress towards this goal.

Scale	No.	Items
Fixedness	10	This goal can be altered.
	25	This goal can be changed.
	53	This goal can be adjusted.
	*87	This goal is inflexible.
Flexibility	3	I will adjust this goal if necessary.
	31	If circumstances change I may well change this goal.
	40	If necessary I am prepared to alter this goal.
	97	If needs be I will alter this goal.
	116	If it proves necessary, I will revise this goal.
Importance to Others	46	It matters to other people that I achieve this goal.
	*64	Other people think this goal is of little consequence.
	*67	Others people are unconcerned whether I achieve this goal.
	*99	Other people think this goal is trivial.
Measurability	51	I can measure, step by step, my progress towards this goal.
	*88	It is difficult to know how far I have progressed towards this goal.
	*101	It is hard to know what stage I am at with this goal.
	*118	It is difficult to know how well I am doing in relation to this goal.
	127	I can tell how far I've come and how far I've got to go in order to achieve this goal.
Options	5	There are various means of achieving this goal.
	8	Several different strategies could be used to achieve this goal.
	18	There are various possible approaches to achieving this goal.
	32	I can see more than one method of achieving this goal.
	108	There is a number of different paths to achieving this goal.
	117	This goal can be achieved in a number of ways.
Origin	7	I set this goal for myself.
	28	I chose to have this goal.
	71	I selected this goal.
	*76	This goal was set for me.
Publicness	34	Other people are aware that I have this goal.
	81	It is widely known that I have this goal.
	84	It is no secret that I have this goal.
	94	Many people know that I have this goal.
	123	The fact that I have this goal is common knowledge.
	146	It is a public fact that I have this goal.
Specificity	11	This goal is precise.
	*86	This goal is ambiguous.
Success Expectation	*27	I doubt that I will achieve this goal.
	*52	It is unlikely that I will achieve this goal.
	*58	It is questionable that I will achieve this goal.
	128	There is a good chance that I will achieve this goal.
	150	I am sure that I will achieve this goal.
Support	*6	Other people hinder my progress towards this goal.
	73	I have people to encourage me with this goal.
	*89	Other people undermine my efforts to achieve this goal.
	113	I get a lot of support in pursuit of this goal.
	*120	Other people discourage me in relation to this goal.
	137	I have people to turn to for advice about this goal.
Teamwork	22	I rely on others to do their part so that I can achieve this goal.
	44	I need others to do their bit so that I can attain this goal.
	61	This goal requires teamwork.
	85	My achieving this goal relies on others fulfilling their role.
Time	33	There is plenty of time to achieve this goal.
	*37	There is insufficient time in which to achieve this goal.
	48	The timescale for this goal is reasonable.
	56	I have enough time in which to complete this goal.
	*62	The deadline for completing this goal is unrealistic.
	*131	I will be pushed for time to achieve this goal.

Scale	No.	Items
Tools	29	I have enough resources to achieve this goal.
	*43	I lack the necessary resources to attain this goal.
	72	I have the necessary tools to achieve this goal.
	*112	I have a shortage of tools in respect to this goal.
	*124	I am inhibited by lack of materials to complete this goal.
	138	I have sufficient materials to achieve this goal.
Value	78	This is a worthwhile goal for me.
	148	I value this goal.

Note. * = Negatively worded items.

Items that were written to assess the opposite or lack of a construct were reversed scored, and the individual's item scores for each scale were averaged. Reliabilities (internal consistencies) for the scales were computed. The means, standard deviations, and alphas of the residual scales are shown in Table 3. All but three scales (Ability, Commitment, and Specificity) produced alpha coefficients that may traditionally be considered adequate (Nunnally, 1978).

Table 3.
Scale Means, Standard Deviations, and Coefficient Alphas

Scale	No. Items	Mean	St Dev	Alpha
Ability	4 items	4.05	.75	0.61*
Commitment	3 items	4.04	.90	0.55*
Competition	5 items	2.58	1.25	0.92
Complexity	5 items	3.62	.85	0.85
Conflict	5 items	2.16	.83	0.86
Control	5 items	3.82	.80	0.82
Difficulty	5 items	3.75	1.06	0.88
Divisibility	5 items	3.41	.88	0.85
Effort	4 items	4.03	.96	0.89
Enjoyment	5 items	3.81	.91	0.89
Feedback	6 items	3.73	.84	0.90
Fixedness	5 items	3.10	1.05	0.81
Flexibility	5 items	3.20	1.03	0.89
Importance to Others	4 items	4.10	.69	0.70
Measurability	5 items	3.93	.73	0.87
Options	6 items	3.66	.81	0.91
Origin	4 items	3.04	1.26	0.88
Publicness	6 items	3.98	.91	0.92

Specificity	2 items	3.81	.86	0.11*
Success Expectation	5 items	4.15	.90	0.90
Support	6 items	3.72	.73	0.75
Teamwork	4 items	3.97	.99	0.88
Time	6 items	3.19	1.00	0.88
Tools	6 items	3.54	.94	0.90
Value	2 items	4.23	.82	0.82

Note. * = Alpha coefficient below acceptable levels (Nunnally, 1978)

Gender Differences

There were 77 females respondents and 28 males. A MANOVA was not possible because diagnostics indicated possible violation of the assumption of homogeneity of covariance matrices. Therefore, separate *t* tests were conducted. At the $p = .01$ level there were no significant gender differences.

Age Differences

Age showed a fairly normal distribution (skewness of .25) with ages ranging from 18-62, with a mean of 37.40 (*SD* 10.04). Age showed no significant ($p = .05$) correlations with the other variables.

Correlations Among Scale Scores

A correlation matrix for the dimensions was produced in an attempt to match up the associations displayed in the correlation matrix with those implied by the hypotheses outlined earlier in the chapter . It would be expected that two variables would be correlated if one was the cause of the other in the model or if they had a common cause. Otherwise, there was no reason to expect a correlation. There is an increased risk of making Type I errors when using a large number of correlation coefficients. Correlations greater or equal to 0.40 were considered in an attempt to offset this risk and the p value in all cases was less than or equal to 0.001. The correlation matrix is shown in Table 4.

Table 4.
Correlation Matrix of Scales

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Ability	-																						
2. Complexity	-.27	-																					
3. Competition	-.23	.29	-																				
4. Commitment	.40*	.07	-.07	-																			
5. Conflict	-.41*	.09	.03	-.43*	-																		
6. Control	.62*	-.20	-.24	.48*	-.56*	-																	
7. Difficulty	-.20	.70*	.42*	.05	.05	-.22	-																
8. Divisibility	.02	.09	-.16	-.01	-.33	.07	-.09	-															
9. Effort	-.13	.62*	.50*	.11	-.05	-.05	.78*	-.04	-														
10. Enjoyment	.35	-.01	.01	.53*	-.58*	.69*	.02	.09	.23	-													
11. Feedback	-.01	.18	.00	.12	-.25	.23	.15	.24	.27	.22	-												
12. Fixedness	.10	-.10	.04	-.04	-.23	.28	-.28	.21	-.09	.24	.07	-											
13. Flexibility	-.02	-.06	.02	-.03	-.01	.14	-.30	.19	-.16	.06	.10	.78*	-										
14. Importance to Others	.04	.08	-.15	.08	-.16	.12	.15	.08	.07	.01	.33	-.20	-.08	-									
15. Measurability	.07	.01	-.12	.13	-.32	.21	-.03	.34	.06	.17	.70*	.10	.13	.30	-								
16. Origin	.36	-.28	-.04	.35	-.49*	.58*	-.24	-.09	-.09	.52*	-.02	.32	.18	-.19	-.02	-							
17. Options	-.08	.20	.06	.09	-.17	.16	.10	.51*	.21	.26	.13	.31	.24	-.05	.20	.12	-						
18. Publicness	-.05	.20	-.12	-.08	.05	-.07	.25	.10	.18	-.14	.37	-.20	-.08	.45*	.38	-.41*	.01	-					
19. Support	.25	-.16	-.30	.09	-.35	.50*	-.28	.24	-.10	.32	.58*	.36	.27	.30	.51*	.30	.21	.13	-				
20. Success Expectation	.52*	-.31	-.36	.39	-.46*	.69*	-.40*	.04	-.28	.44*	.10	.21	.14	.03	.14	.50*	.00	-.22	.39	-			
21. Time	.36	-.33	-.34	.20	-.47*	.68*	-.44*	.19	-.30	.48*	.26	.41*	.27	.02	.26	.55*	.27	-.18	.67*	.59*	-		
22. Tools	.34	-.36	-.18	.07	-.29	.46*	-.39	.05	-.17	.22	.27	.18	.15	.13	.24	.35	.04	-.09	.61*	.38	.56*	-	
23. Teamwork	-.30	.48*	.26	-.07	.13	-.22	.53*	.19	.39	-.11	.21	-.21	-.19	.08	.14	-.33	.30	.24	-.18	-.35	-.27	-.35	-
24. Value	.40*	-.05	-.10	.55*	-.69*	.71*	-.03	.12	.18	.75*	.24	.20	.03	.09	.27	.56*	.24	-.07	.41*	.60*	.47*	.34	-.18

Note: * p = .001.

There were 53 significant correlations, .40 or greater in absolute magnitude. Alphabetically, Ability correlated positively with Commitment, Control, Success Expectation, and Value and negatively with Conflict. Complexity correlated positively with Difficulty, Effort, and Teamwork. Competition correlated positively with Difficulty and Effort. Commitment correlated positively with Control, Enjoyment, and Value and negatively with Conflict. Conflict correlated negatively with Control, Enjoyment, Origin, Success Expectation, Time, and Value. Control correlated positively with Enjoyment, Origin, Support, Success Expectation, Time, Tools, and Value. Difficulty correlated positively with Effort, and negatively with Success Expectation, Time, and Teamwork. Divisibility correlated positively with Options. Enjoyment correlated positively with Origin, Success Expectation, Time, and Value. Feedback correlated positively with Measurability and Support. Fixedness correlated positively with Flexibility and Time. Importance to Others correlated positively with Publicness. Measurability correlated positively with Support. Origin correlated positively with Success Expectation, Time, and Value and negatively with Publicness. Support correlated positively with Time, Tools, and Value. Success Expectation correlated positively with Time and Value. Time correlated positively with Tools and Value.

Discussion

The response rate to the questionnaire of 13% was disappointing and the sample size restricted the analysis and interpretation of the data. Because of the disparate nature of the workforce, the questionnaire had to be mailed, but it was felt that enough background work had been done by the company to ensure questionnaires would be completed. It is acknowledged that the questionnaire was long, and that traditionally the response rate for mailed surveys is low. However, the reason that many of the employees decided not to complete these questionnaires is not clear.

The primary objective of this research was to design a questionnaire to measure individuals' perceptions of their goals. A total of 22 scales had Cronbach's alpha greater than 0.70, and 23 scales displayed adequate fit statistics in LISREL. Nineteen skewed items were deleted. However, 11 of the 19 items came from three dimensions: three from Commitment, four from Value and four from Specificity. This skewed response is possibly an artefact of the sample and in another sample items may display a more normal frequency distribution. The response rate was low and perhaps the people who completed the questionnaires had specific (as opposed to vague and unclear intentions) and valued (as opposed to non valued) goals so were therefore more willing to reflect on their perceptions. Deleting skewed items at an early stage of the analyses meant that these items were not included in any further analysis, but this does not mean that these deleted items are not useful indicators of the dimensions for which they were written and should therefore be considered in future studies.

Using a rigorous and sequential approach to model testing it is possible to glean a considerable amount of detailed and useful information about the factorial validity of an instrument. Without departing from a hypothesis-testing approach, detailed examination of the fit can identify problematic items that may be eliminated to refine the measurement instrument (Markland & Ingledew, 1997). The diagnostic information provided by the confirmatory factor analysis highlighted an ongoing problem of the use of both negatively and positively worded items within the same scale.

Spector (1992) recommends the use of items which measure the opposite or absence of a construct to help combat respondents' tendency to agree with all items, without using negatives such as "not" or "no" as they are easy for a respondent to miss, and can be confusing (for example, "This goal is not difficult"). When using

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CFA negatively worded items did not sit well within the scales. For the majority of the scales that contained negatively worded items, the residuals suggested that models underestimated the relationships between the negatively worded items. An initial strategy that seemed appropriate was to specify a two factor solution with negatively worded items loading on a separate but hopefully highly correlated factor. In the majority of cases, this strategy resulted in adequately fitting statistics. A further criterion imposed on the two factor solution was that 95% confidence interval for the correlation between factors must include 1; otherwise it could not be claimed that the positively and negatively worded items formed a homogenous scale. The majority of the models failed to meet this last criterion.

When it came to pairing the scales a number of scales consistently failed to meet the criteria for fit and solutions for these scales were sought. When using only coefficient alphas to assess a scale this problem is not apparent. According to Schmitt (1996), a relatively high level of alpha can be obtained even when the intercorrelations of the items indicate the presence of two factors. What seems to be happening is that the negatively worded items, instead of measuring the other end of a continuum are actually measuring something slightly different. It would seem that we have reached an impasse. If one uses negatively worded items one runs the risk of producing scales that are not truly homogeneous but if one does not include negatively worded items one runs the risk of response bias.

The relationship between Flexibility (a willingness to change one's goal) and Fixedness (a perception that one can change one's goal) requires closer examination. The 95% confidence interval for the correlation for the two scales in the paired confirmatory factor analysis approached one. This suggests that these two scales are not distinguishable. Therefore, it is recommended that for the next study only one of the two scales should be retained.

Correlations that were consistent and inconsistent with the relationships specified and high correlations that were not specified are discussed. It was proposed that value and success expectation influence commitment. Value but not Success Expectation was significantly correlated with Commitment, although the latter relationship approached the fairly stringent significance level adopted in this study (r = .39). These findings support those of Klein (1991b) who found an average weighted effect size of 0.19 for the relationship between the expectancy of goal attainment and goal commitment and an average weighted effect size of 0.43 for the relationship between attractiveness of goal attainment and goal commitment.

It was proposed that Competition, Conflict, Enjoyment, Importance to Others, Origin, Publicness, and Specificity influence Value. As predicted Enjoyment, and Origin correlated significantly and positively with Value, and Conflict correlated significantly and negatively with Value. Competition, Publicness and Importance to Others did not show significant relationships with Value. Goal Specificity was not included in the correlations because there were only two remaining items following the deletion of skewed items and the remaining two items had a particular low reliability alpha.

It was proposed that ability, complexity, control, difficulty, divisibility, effort, feedback, fixedness, flexibility, measurability, options, support, teamwork, time, and tools influence success expectation. As predicted, Success Expectation correlated positively with Ability, Control, and Time, and negatively with Difficulty. Success Expectation showed no significant relationship with the others (Complexity, Divisibility, Effort, Feedback, Fixedness, Flexibility, Measurability, Options, Support, Teamwork, and Tools). Some dimensions may be antecedents of other dimensions that are in turn antecedents of value or success expectation. For example, Complexity, Effort, and Teamwork were hypothesised to affect

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Success Expectation. However, none of these relationships were significant. Complexity, Effort, Teamwork, and Competition correlated significantly with Difficulty. Therefore, it is suggested that the factors that contribute to individuals considering that their goals are difficult are: if the goals are complex; require a great deal of effort to achieve; that they require teamwork to achieve; and that one is in competition with others to achieve it.

The correlation between Success Expectation and Support approached the stringent significant levels set in this study (r = .39). However, Support did have a significant correlation with Control. It may be that support affects the extent to which an individual feels in control of their goal. According to Skinner et al. (1990), Connell and Wellborn (1990), and Skinner (1992), the role of the social context is crucial in creating experiences of control. They suggested that others provide or arrange for the amount and quality of structure that affects one's self-efficacy and perceived control over outcomes.

Feedback, measurability, and tools were hypothesised to affect success expectation. However, none of these correlations were significant. These three scales (Feedback, Measurability, and Tools) did correlate with Support. These relationships highlight the role of others in providing feedback and the necessary tools to enable individuals to achieve their goal.

From the correlations it is suggested that the effects of some of the dimensions may have been underestimated. The same groupings of correlations seem to come up again and again. In fact, whenever Origin correlated ≥.40 with another scale (apart from Publicness), that scale also correlated with Value, Enjoyment, Success Expectation, Control, Time, and Conflict ≥.40. These associations seem to suggest that if an individual perceives that they have originated their goal then they consider it to be one which they value, enjoy, feel in control of,

have enough time to achieve, believe they can achieve it, and that it does not pose a conflict of interests. The relationship between these scales may be because an individual chooses a goal that fulfils these criteria.

Value correlated (positively) with Ability, Control, Support, Success Expectation, and Time. These relationships could be a result of value enhancing an individual's success expectation. Kirsch (1985) suggested that reinforcement value could affect success expectation if achievement of a goal is reliant on an investment of effort rather than skill. He found that individuals' expectancy scores changed when incentives were offered. Alternatively this relationship may be because individuals enhance the value of a goal they are working on (look for all the positive reasons why it is a worthwhile goal) and exaggerate the likelihood of success in order to promote motivation towards achieving it (Heckhausen & Schulz, 1995).

Another variable that, with reference to the correlations, appeared to play a prominent role, which would belie the minor role to which it had been assigned, was that of conflict. As predicted, Conflict correlated with Value and Commitment but Conflict also showed strong associations with Origin, Ability, Time, Control, Success Expectation, and Enjoyment. According to Locke and Latham (1984), goal conflict must be minimised in order to maximise the effects of goal setting. These findings would suggest that conflict might have a powerful influence on key goal setting constructs.

This research has provided preliminary analysis for the development of the goal perceptions scale. Further research is required to confirm the factor structure and validate the scales in the context of a model of the determinants of goal-related commitment and affects.

CHAPTER 3

Further Development of the Goal Perceptions Questionnaire

Abstract

The aim was to develop a questionnaire to measure an individual's perception of his or her goal. Twenty-five goal dimensions were identified from existing theories. The research was conducted in the workplace. Following a pilot study, a questionnaire comprising four items representing each of the 25 dimensions was completed by 201 employees. The questionnaire was readministered three months later. Sequential confirmatory factor analysis was performed, testing each scale singly, and then testing all possible pairings of scales. Fits were generally good: At baseline, 21 of the 25 scales met the fit criteria (and the remaining 4 still had adequate coefficient alphas). The presence of positively and negatively worded items in a scale tended to detract from fit. Goals were categorised and different types of goals had different characteristics. The pattern of correlations between scales was largely consistent with the underlying theories. In conclusion, the Goal Perceptions Questionnaire shows satisfactory factorial validity.

Introduction

The aim of this research was to develop a questionnaire to measure goal dimensions. This questionnaire was designed to assess individual's *perceptions* of their goals. It was designed as a *generic* questionnaire, that is to say, for use in various areas of life, e.g., work, sport, and personal life, and it is *multi-dimensional*, that is to say, it was designed to assesses a broad set of dimensions. Justification for this approach is provided. This questionnaire was designed to explore the relationships between goal dimensions, identify antecedents of key goal constructs such as goal commitment, and to elucidate the mechanisms by which goal perceptions affect outcomes such as performance and well-being.

According to Austin and Vancouver (1996), goals can be analysed at physiological, functional, sociological, or ecological levels, within individual, dyad, group, or organisational systems. This research is concerned with the functional-individual level of analysis. At this level (according to Austin & Vancouver), goals can be considered from three perspectives: latent (goals not necessarily perceived consciously); phenomenological (goals as perceived by the individual him or herself) or external observer (goals as perceived by others). In this research, a phenomenological perspective was adopted. That is to say, this research is concerned with individuals' perceptions of their own goals. Within health psychology, individual's perceptions are increasingly considered important determinants of future behaviour and affect (Fiske & Taylor, 1991).

Goals are used in many contexts, such as work (e.g., Locke & Latham, 1990), sport (e.g., Beggs, 1990), education (e.g., Martin & Pintrick, 1991), and personal domains (e.g., Emmons, 1999). There is merit in trying to identify and measure a set of dimensions that can be used to describe a goal in any context as this would facilitate the development and testing of context-free theories. Austin and Vancouver (1996) have noted that goal research is fragmented, resulting in a

proliferation of micro-theories. A questionnaire that assessed goal dimensions in a context-free format would therefore be a useful tool for unifying goal research.

In identifying dimensions to be included in the questionnaire the conservative approach would be to aim for a very narrow set, perhaps the most proximal determinants of performance and well-being. However, there is merit in assessing a broader set of dimensions, to include the more distal determinants of outcomes. For example, in addition to knowing that an individual values their goal or expects to achieve it, it may be helpful to identify the factors that influence these perceptions. Ultimately, this approach is likely to be useful in designing effective goal-setting programmes, possibly because the more distal determinants may be the more malleable. In this regard, it is important to remember that proliferation of goal constructs is only warranted if accompanied by careful consideration of how the constructs relate to each other structurally (Austin & Vancouver, 1996).

Several previous researchers have attempted to measure goal perceptions. Some of the instruments have measured only one (e.g., Hollenbeck et al. 1989a; Ballantine et al., 1992) or a small number (e.g., Steers, 1976; Ivancevich & McMahon, 1977; Roberson, 1989; Allscheild & Cellar, 1996) of goal dimensions. In some instances, there has been a lack of psychometric care, with researchers using only one or two items per dimension (e.g., Emmons, 1986; Brunstein, 1993; Yearta et al., 1995; Sheldon & Kasser, 1998). Locke and Latham (1984) developed a 53 item questionnaire to measure goal perceptions. Lee et al. (1991) conducted an empirical analysis of this questionnaire. It showed some factorial and predictive validity. However, it failed to identify core goal dimensions of difficulty and specificity. Moreover, many items explored not only goal perceptions, but also general perceptions of the workplace, and therefore the questionnaires' use is restricted. For example, items

included "The top people here do not set a very good example for the employees since they are dishonest themselves" and "I understand exactly what I am supposed to do on my job". Similar criticisms apply to other measures (e.g., Steers, 1976; Arvey & Dewhirst, 1976). Having considered the extant measures, it was felt that there was a need to design a goal perceptions questionnaire, which was generic and would measure a myriad of goal dimensions.

The first task in designing this questionnaire was to identify important goal dimensions. Taking as the starting point the concept of goal commitment. Klein, Wesson, Hollenbeck, and Alge (1999) suggested that goal commitment is critical to understanding the relationship between goals and task performance. Hollenbeck and Klein (1987) developed a model of the antecedents of goal commitment. Hollenbeck and Klein's model was followed by Locke, Latham, and Erez' (1988; updated by Locke & Latham, 1990) and these models were expanded upon by Wofford, Goodwin, and Premack (1992). All these models are based on value-expectancy theory (e.g., Vroom, 1964). Many of the dimensions from Hollenbeck and Klein's (1987) model have been included in this research. Some dimensions from Hollenbeck and Klein's model have been adapted to ensure that the instrument measured individuals' perceptions of their goals (rather than, e.g., individuals' psychological traits) and was context-free. Some dimensions were renamed so as be consistent with mainstream psychological theories. Other psychological theories directed the author's thinking and were been used to identify putative dimensions. These included certain social cognitive theories (Rotter, 1954; Bandura, 1997; Ajzen & Madden's, 1986, Theory of Planned Behaviour) and motivational theories (Deci & Ryan's, 1985, Cognitive Evaluation Theory).

The dimensions included in this research are now briefly detailed. Hollenbeck and Klein's model proposed that *commitment* is affected by the expectancy of goal attainment (which is termed *success*

expectation) and the attractiveness of goal attainment (which is termed *value*). According to Hollenbeck and Klien's model, determinants of success expectation include *control, support, complexity*, and *ability*. Their dimension of control refers to locus of control; however, it is considered that a dimension of control that specifically related to the goal would be more appropriate. Their dimension of support refers to supervisory support; however, it was considered that a dimension of support that did not identify the source of support was more appropriate. As well as support, it is essential that individuals have sufficient resources to enable them to achieve their goal (Lee et al., 1991); therefore the dimensions of *time* and *tools* were also included.

Although Hollenbeck and Klein include complexity in their model, they do not include goal difficulty as a possible antecedent of goal commitment (an omission noted by Klein et al., 1999). Lee et al. (1991) proposed that goal measures should include items that expand the concept of difficulty. Therefore, in addition to including a general measure of *difficulty* and complexity, also included are measures of *effort, divisibility, fixedness, flexibility, options*, and *teamwork*. Goals may be perceived as difficult because they require a great deal of effort to achieve (Lee et al., 1991). Goals may be made easier by dividing them up into sub-goals (Bandura, 1987). Goals may or may not perceived as changeable as distinct from being fixed and immutable (Brandtstadter, 1992). Individuals may or may not be willing to adjust their goal in the light of changing circumstances (Brandtstadter, 1992). Individuals may or may not perceive that there are a number of ways (options) of achieving the same goal (Brandtstadter, 1992). Lastly, some goals can only be achieved by working with others; they require teamwork, and although teamwork may aid goal attainment, having to work with others can frustrate goal attainment (Burton, 1992). It is proposed that these additional dimensions not only expand the concept of difficulty but also may be important determinants in outcomes such as well-being. For example, Brandtstadter (1992) suggested that an individuals' ability to make

alternative interpretations and to explore alternative processes may enhance well-being, and that an individuals' capability or readiness to disengage from thwarted goals may diminish the impact of aversive and stressful experiences.

Austin and Vancouver (1996) have noted a striking lack of goal dimensions related to the monitoring of goal progress in goal research. In the questionnaire, a dimension termed *measurability* is included that assesses the extent to which individuals feel they can monitor their progress towards their goal. In addition, a measure of *feedback* is included that assesses the extent to which individuals receive feedback on their progress, and also included is a general measure of perceived *progress*.

Hollenbeck and Klein (1987) proposed that determinants of value include *publicness*, volition (which is termed *origin*), *competition*, and explicitness (which is termed *specificity*). The implicit or explicit attitudes of others or group norms may affect an individual's motivation to achieve or value their goal (Locke & Latham, 1990). Therefore, a measure of *importance to others* is included. Since an individual invariably has a number of goals, it is important that their goals do not *conflict* with other goals (Locke & Latham, 1984). Finally, a dimension termed *enjoyment* was included. Enjoyment is an important construct within Deci and Ryan's Cognitive Evaluation Theory (e.g., 1990), as indeed are other constructs that are included in this research such as ability, control, feedback, importance to others, measurability, origin, options, support, success expectation, and value.

One of the main areas where goal use is widespread is the workplace. Locke, Latham, and their colleagues have been forerunners of research in the use of goals in organisations. However, much of their goal theory is based on laboratory or experimental studies, a point that they have acknowledged (Locke & Latham, 1990). According to Yearta et al. (1995), laboratory findings may not extrapolate to the workplace,

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there is a paucity of workplace goal research into its effectiveness and consequences, and it is critical for organisational theorists and practitioners to increase their understanding of relationships in complex organisational contexts. Therefore, this research takes place in the workplace.

In developing the questionnaire, a sequential approach to confirmatory factor analysis is employed. Rather than testing the whole questionnaire in one confirmatory factor analysis, the scales are tested one at a time in single factor models and then paired in scales in two factor models. Such a sequential approach to model testing is advocated by Jöreskog (1993) and has been used previously in questionnaire development (e.g., Markland & Ingledew, 1997; Mullen, Markland, & Ingledew, 1997). Markland and Ingledew argue that this sequential approach makes it possible to refine a measurement instrument without departing from a hypothesis-testing framework. Additionally, models are kept relatively small and so do not exceed sample size limitations.

According to Austin and Vancouver (1996), there is a need to develop taxonomy of goals to support theoretical development. Many researchers have attempted to categorise personal goals (e.g., Astin & Nichols, 1964; Ford & Nichols, 1987; Wheeler, Munz, and Jain, 1990; Emmons, 1992). Roberson (1989) categorised work goals, grouping goals with reference to their content. For example, some goals referred to pay, whilst other referred to training/skill development. In this research, individual's goals will be similarly categorised and the relationship between goal categories and goal dimensions explored.

Lastly, the correlations among scales are examined to check for consistency with theoretical predictions. A simple model, based primarily on Hollenbeck and Klein (1987) is proposed. The relationships between dimensions are hypothesised to broadly follow a value expectancy model. In alphabetical order, competition, conflict,

enjoyment, importance to others, origin, publicness, and specificity will be correlated with value. Ability, complexity, control, difficulty, divisibility, effort, feedback, fixedness, flexibility, measurability, options, progress, support, teamwork, time, and tools will be correlated with success expectation. Value and success expectation will be correlated with commitment.

Method

Pilot study

A provisional instrument was developed comprising scales to measure 25 constructs: ability, complexity, competition, commitment, conflict, control, difficulty, divisibility, effort, enjoyment, feedback, fixedness, flexibility, importance to others, measurability, origin, options, publicness, specificity, support, success expectation, time, tools, teamwork, and value. A scale to measure the construct of progress was not included in the pilot study. This was because, at that stage, progress was viewed as primarily an outcome variable (a perception of performance to date).

Each scale contained six items. Items were generated by referring to previous research, by "brainstorming", and (in order to identify appropriate synonyms, antonyms, and alternative phraseologies) by consulting various dictionaries and thesauri. For each scale, an attempt was made to write three items that represented the presence of the construct and three items that represented the opposite or lack of the construct. For example, for the scale of value, the six items were "This goal is important to me", "This is a worthwhile goal for me", "I value this goal", "This goal means little to me", "This goal is of little consequence to me", and "To me this goal is trivial". For ease of reference, and in line with the literature (e.g., Schmitt & Stults, 1985), the items that measure the presence of the construct are termed positively and those that measure the absence or the opposite of the construct are termed negatively worded items. For some dimensions it proved unfeasible to generate negatively worded items (without using

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"not" or "no" which might have confused respondents) because there were few obvious opposite words or phrases. Consequently, not all scales contained both positively and negatively worded items. Items were assessed for content validity by the other two authors and revised accordingly. The instrument was tested on 16 post- and undergraduate students. In addition, three senior managers of the company involved in the pilot study were asked to peruse the questionnaire, to confirm that the instructions and items were clear and applicable.

The questionnaire instructions invited respondents to state a goal that they were working towards and then to rate that goal on each of the questionnaire items, using a 5-point scale; *strongly disagree, disagree, neither agree nor disagree, agree,* and *strongly agree.* The questionnaire was completed by 111 employees of a nation-wide training company. The data were subjected to a series of confirmatory factor analyses using LISREL 8 (Jöreskog & Sörbom, 1993) with maximum likelihood estimation. A sequential approach to model testing was used. In such an approach, the scales would be tested one at a time in single factor models, i.e., 25 models. Then, the scales would be tested two at a time in two factor models, i.e., 300 models. The largest model would then comprise 12 observed variables (two scales) and two latent variables.

The global fit indices used in the pilot study were chi-square and its associated *p* value, Root Mean Square Error of Approximation (RMSEA: Steiger, 1990; Browne & Cudeck, 1993) and the associated *p* value for RMSEA < .05, Goodness of Fit Index (GFI: Jöreskog & Sorbom, 1981), Comparative Fit Index (CFI: Bentler, 1990), and the Standardised Root Mean Square Residual (SRMR). These fit indices and their relative merits and demerits have been extensively debated (e.g., Hoyle & Panter, 1995; Jaccard & Wan, 1996). In addition to these global fit indices, three sources of diagnostic information were examined: the standardised residuals (a large positive standardised residual for two items indicating that the model underestimated their

relationship, and a large negative standardised residual indicating that the model overestimated their relationship); the factor loadings; and the modification indices for the loadings of items on non-intended factors, and the 95% confidence interval for the correlation between factors.

The objective was to identify the four best items for each scale, ideally all four items being strong and unambiguous indicators of their intended construct. The items that were deleted were those that were least satisfactory as evidenced by the diagnostic information. Due to lack of space, the results of the pilot study are not reported in this paper. The shortened scales were then tested on a new and larger sample, in the main study.

Main study
Participants
For the main study, five local companies were approached. These were three privatised government utilities, a privatised government agency, and a car parts manufacturer. A total of 201 employees from these companies participated at baseline. The participants comprised 45 females, 149 males, and 7 who did not reveal their gender. Ages ranged from 20 to 59 with a mean of 38.31 ($SD = 9.99$) years. Of those who participated at baseline, 162 participated at follow-up.

Measures
Twenty five scales were tested in the main study. Twenty four of these came from the pilot study. Flexibility, which had been included in the pilot study, was not included in the main study. This was because, in the pilot study, the Flexibility scale and the Fixedness scale were not clearly discriminated (the correlation between factors was .91, SE .03, 95% confidence interval .85 to .97). Progress, which had not been included in the pilot study, was included in the main study. This was because, in the period between the pilot and the main study, the authors began to think of perceived progress less as a

possible outcome variable and more as a possible determinant of outcomes such as affect (e.g., Brunstein, 1993).

Four items were included for each of the scales, except for Progress. Progress initially comprised six items but these were reduced to four using the same procedures and criteria as in the pilot study. The Goal Perceptions Questionnaire therefore comprised 102 items, subsequently reduced to 100. The 100 items grouped by scale are shown in Table 5.

The questionnaire can be seen in Appendix D. Respondents were asked to state their goal, identify how long the goal would take from start to finish, and by what date the goal should be achieved. They then completed the Goal Perceptions Questionnaire using the same 5-point scale as used in the pilot study which ranged from *strongly disagree* to *strongly agree*. Participants also completed questions about their affective responses to the goals (the analyses of which are reported in Chapter Four).

Procedure

Where possible, individuals were personally approached by the author. However, direct access to individuals was not always possible as the management preferred to arrange their own distribution, with questionnaires either sent through the internal post or via team briefings. Questionnaires were distributed with accompanying letters that explained the purpose of the study (see Appendix E), and reply envelopes. Questionnaires were returned either to the point of contact within the company for forwarding unopened to the researcher, or direct to the researcher. Three months later participants were contacted and asked to fill in the questionnaire again. For the second data collection, new instructions were written that incorporated the respondent's original goal. Individuals were asked whether they had achieved their original goal and, if not, whether they were still working towards it. If individuals were still working towards their

original goal, they were asked to complete the questionnaire with reference to that goal. If individuals felt they had achieved their original goal or were no longer working towards it, they were asked to think of another goal that they were currently working towards and to complete the questionnaire with reference to this new goal.

Analysis

The baseline and follow-up data were subjected to a series of confirmatory factor analyses using LISREL 8 (Jöreskog & Sörbom, 1993) with maximum likelihood estimation. As in the pilot study this involved testing the scales one at a time in single factor models and then pairing each scale with every other scale in two factor models. Hu and Bentler's (1999) criteria for assessing fit were employed. For smaller sample sizes (less than 250) they advocate assessing fit in terms of SRMR close to .09 in combination with CFI (or a similar index) close to .95 and these were the criteria employed (Hu and Bentler's criteria were not published at the time of the pilot study). Standardised residuals, factor loadings, and correlations between factors were also scrutinised.

Having tested the factor structure of the scales, descriptive statistics and internal consistencies were computed for each scale. Age and gender differences were explored. The author examined the stated goals (baseline data), identified broad categories, and coded the goals into the categories. A second researcher (not connected with the project) also categorized the goals using the first researcher's coding scheme. Inter-coder reliability was assessed using Cohen's kappa (Cohen, 1960). The relationships between goal categories and goal perceptions were examined using ANOVAs with Scheffé follow-up tests. Scale means were calculated and the correlations between the goal scales examined.

Results

Single Confirmatory Factor Analyses

Table 5 details the single scale confirmatory factor analyses of the baseline and follow-up data from the main study. At baseline, 21 of the 25 scales met both fit criteria (SRMR close to .09 and CFI close to .95) and all scales met at least one of the criteria. The four scales that did not meet both criteria were Control, Publicness, Time, and Tools. At follow-up, 21 of the 25 scales met both criteria, and all scales met at least one of the criteria. The four scales that did not meet both criteria were Conflict, Control, Importance to Others, and Origin

Table 5.

Single Factor Confirmatory Factor Analyses of Goal Perception Scales at Baseline and at Follow-up

Factor/Item	Baseline							Follow-up						
	Loading	$\chi^2(2)$	$p(\chi^2)$	RMSEA	p (RMSEA $\le.05$)	SRMR	CFI	Loading	$\chi^2(2)$	$p(\chi^2)$	RMSEA	p (RMSEA $\le.05$)	SRMR	CFI
Ability/		1.92	.38	0.00	.54	0.02	1.00		3.47	0.18	0.07	0.29	0.03	.99
This goal might exceed my current abilities.	-.44							-.48						
I have the necessary abilities to achieve this goal.	.59							.70						
I have the skills needed to attain this goal.	.92							.82						
I have the necessary expertise to achieve this goal.	.79							.63						
Commitment/		5.27	.07	0.09	.17	0.02	.99		8.07	0.02	0.14	0.05	0.02	.98
I mean to achieve this goal.	.80							.86						
I am really committed to achieving this goal.	.66							.80						
I fully intend to achieve this goal.	.95							.86						
I am determined to reach this goal.	.86							.80						
Competition/		13.11	.00	0.17	.01	0.03	.98		1.56	0.46	0.00	0.58	0.01	1.00
To achieve this goal, I have to compete with others.	.62							.72						
To achieve this goal my performance has to be superior to others.	.89							.83						
To reach this goal I must do better than others.	.91							.94						
I have to outperform others to achieve this goal.	.90							.90						
Complexity/		2.45	.29	0.03	.46	0.03	1.00		6.54	0.04	0.12	0.09	0.04	.97
This goal requires detailed planning.	-.35							-.35						
This is an uncomplicated goal.	.62							.77						
This goal is simple.	.90							.80						
This is a complex goal.	-.48							-.74						
Conflict/		3.77	.15	0.07	.29	0.03	.99		13.17	0.00	0.19	0.01	0.07	.94
This goal fits in well with my other goals.	-.42							-.38						
This goal seems to contradict the purpose of my other goals.	.62							.52						
This goal conflicts with some of my other goals.	.88							.76						
This goal clashes with my other goals.	.84							.91						
Control/		29.48	.00	0.26	.00	0.09	.86		26.23	0.00	0.28	0.00	0.09	.86
As regards this goal, I feel in command of the situation.	.78							.74						
I am powerless in relation to this goal.	-.51							-.54						
I am helpless in relation to this goal.	-.43							-.46						
I am in control of this goal.	.79							.72						

Factor/Item	Loading	Baseline						Loading	Follow-up					
		$\chi^2(2)$	$p(\chi^2)$	RMSEA	p (RMSEA $\leq .05$)	SRMR	CFI		$\chi^2(2)$	$p(\chi^2)$	RMSEA	p (RMSEA $\leq .05$)	SRMR	CFI
Difficulty/		4.33	.11	0.08	.24	0.02	.99		0.33	0.85	0.00	0.89	0.01	1.00
This goal is easy.	-.68							-.65						
This goal is difficult.	.77							.84						
This is a tough goal.	.91							.83						
This is a hard goal.	.88							.92						
Divisibility/		8.42	.02	0.13	.05	0.03	.98		1.19	0.55	0.00	0.67	0.01	1.00
This goal can be divided into smaller parts.	.84							.81						
This goal can be simplified by splitting it up.	.78							.85						
I can break this goal down into sub-goals.	.81							.87						
I find it hard to see how this goal could be broken down.	-.60							-.69						
Effort/		4.17	.12	0.08	.25	0.02	.99		4.18	0.12	0.08	0.23	0.02	.99
I will need to strive hard to achieve this goal.	.60							.49						
I will need to stretch myself to achieve this goal.	.87							.85						
I will have to exert myself to achieve this goal.	.83							.82						
I will have to push myself to achieve this goal.	.81							.81						
Enjoyment/		10.60	.01	0.15	.02	0.03	.98		6.93	0.03	0.13	0.08	0.02	.99
I enjoy working towards this goal.	.84							.86						
I get a lot of satisfaction out of pursuing this goal.	.80							.88						
I dislike having to work towards this goal.	-.65							-.63						
Pursuing this goal gives me a lot of pleasure.	.81							86						
Feedback/		4.95	.08	0.09	.19	0.02	.99		4.79	0.09	0.10	0.18	0.03	.99
I get feedback on the progress I am making towards this goal.	.73							.68						
People fail to tell me how I am progressing in relation to this goal.	-.51							-.38						
I am kept informed about my progress towards this goal.	.93							.93						
I am kept in the picture about my progress towards this goal.	.87							.81						
Fixedness/		3.54	.17	0.06	.31	0.02	1.00		1.42	0.49	0.00	0.61	0.01	1.00
This goal can be altered.	.57							.60						
This goal can be adjusted.	.83							.71						
This goal can be changed.	.88							.98						
This goal can be amended.	.93							.88						
Importance to Others/		7.50	.02	0.12	.08	0.04	.96		18.15	0.00	0.23	0.00	0.07	.92
Other people think this goal is trivial.	.67							.76						
Other people think this goal is of little consequence.	.70							.90						
Others people are unconcerned whether I achieve this goal.	.59							.63						

Factor/Item	Baseline							Follow-up						
	Loading	$\chi^2(2)$	$p(\chi^2)$	RMSEA	p (RMSEA $\leq$ .05)	SRMR	CFI	Loading	$\chi^2(2)$	$p(\chi^2)$	RMSEA	p (RMSEA $\leq$ .05)	SRMR	CFI
It matters to other people that I achieve this goal.	-.47							-.49						
Measurability/		5.35	.07	0.09	.17	0.03	.99		0.30	0.86	0.00	0.90	0.01	1.00
It is hard to know what stage I am at with this goal.	.56							.65						
It is difficult to know how far I have progressed towards this goal.	.82							.88						
It is difficult to know how well I am doing in relation to this goal.	.84							.79						
I can measure, step by step, my progress towards this goal.	-.44							-.55						
Options/		0.58	.75	0.00	.84	0.01	1.00		2.61	0.27	0.04	0.40	0.02	1.00
There are a number of different paths to achieving this goal.	.69							.62						
I can see more than one method of achieving this goal.	.87							.85						
There are various possible approaches to achieving this goal.	.85							.87						
This goal can be achieved in a number of ways.	.85							.81						
Origin/		1.44	.49	0.00	.63	0.01	1.00		21.63	0.00	0.25	0.00	0.05	0.94
I chose to have this goal.	.80							.79						
This goal was set for me.	-.54							-.58						
I set this goal for myself.	.83							.79						
I selected this goal.	.93							.94						
Progress/		4.36	.11	0.08	.24	0.02	.99		0.21	0.90	0.00	0.93	0.01	1.00
So far, progress on this goal has been slow.	.56							.66						
So far, I seem to be getting nowhere with this goal.	.78							.59						
So far, I have made a lot of progress towards achieving this goal.	-.80							-.77						
So far, I am on course to achieving this goal.	-.80							-.73						
Publicness/		88.32	.00	0.47	.00	0.08	.84		6.81	0.03	0.12	0.08	0.02	.99
The fact that I have this goal is common knowledge.	.86							.76						
It is widely known that I have this goal.	.89							.87						
It is a public fact that I have this goal.	.73							.86						
Many people know that I have this goal.	.78							.90						
Specificity/		8.68	.01	0.13	.05	0.04	.96		0.20	0.90	0.00	0.93	0.01	1.00
This goal is ambiguous.	.46							-.44						
This goal is specific.	-.70							.89						
This goal is clearly defined.	-.72							.64						
This goal is vague.	.69							-.58						
Success Expectation/		17.61	.00	0.20	.00	0.03	.96		7.47	0.02	0.13	0.06	0.03	0.98
I doubt that I will achieve this goal.	.79							-.54						
There is a good chance that I will achieve this goal.	-.80							.89						

Factor/Item	Baseline							Follow-up						
	Loading	$\chi^2(2)$	$p(\chi^2)$	RMSEA	p (RMSEA $\leq .05$)	SRMR	CFI	Loading	$\chi^2(2)$	$p(\chi^2)$	RMSEA	p (RMSEA $\leq .05$)	SRMR	CFI
I am sure that I will achieve this goal.	-.80							.81						
It is unlikely that I will achieve this goal.	.82							-.70						
Support/		4.07	.13	0.07	.26	0.03	.98		5.06	0.08	0.10	0.16	0.04	.96
I get a lot of support in pursuit of this goal.	.65							.55						
Other people undermine my efforts to achieve this goal.	-.22							-.31						
I have people to turn to for advice about this goal.	.56							.61						
I have people to encourage me with this goal.	.85							.75						
Teamwork/		6.63	.04	0.11	.10	0.03	.99		4.99	0.08	0.10	0.17	0.02	.99
I need others to do their bit so that I can attain this goal.	.84							.83						
My achieving this goal relies on others fulfilling their role.	.92							.90						
I rely on others to do their part so that I can achieve this goal.	.79							.81						
This goal requires teamwork.	.60							.72						
Time/		11.70	.00	0.16	.02	0.04	.94		4.72	0.09	0.09	0.18	0.03	.99
The deadline for completing this goal is unrealistic.	.66							.73						
I have enough time in which to complete this goal.	-.74							-.79						
There is insufficient time in which to achieve this goal.	.62							.84						
I will be pushed for time to achieve this goal.	.56							.48						
Tools/		16.55	.00	0.19	.00	0.05	.93		6.38	0.04	0.12	0.10	0.03	.98
I am inhibited by lack of materials to complete this goal.	.62							.61						
I have the necessary tools to achieve this goal.	-.73							-.75						
I have enough resources to achieve this goal.	-.67							-.76						
I have a shortage of tools in respect of this goal.	.74							.76						
Value/		21.16	.00	0.22	.00	0.04	.95		7.98	0.02	0.14	0.05	0.03	0.98
This goal is important to me.	.89							.86						
This goal means little to me.	-.73							-.76						
This is a worthwhile goal for me.	.75							.73						
I value this goal.	.81							.83						

Note. Baseline $N = 191$ to 201 by listwise deletion for missing values at baseline. Follow-up $N = 154$ to 160. RMSEA = Root Mean Square Error of Approximation. SRMR = Standardised Root Mean Square Residual. CFI = Comparative Fit Index. GFI = Goodness of Fit Index.

Thus, the only scale that did not meet both criteria at baseline and at follow-up was Control. This scale contained two positively worded items ("As regards this goal, I feel in command of the situation" and "I am in control of this goal") and two negatively worded items ("I am powerless in relation to this goal" and "I am helpless in relation to this goal"). At baseline, the two positively worded items formed a large positive (greater than 2.58) standardised residual, as did the two negatively worded items. This indicated that a single factor model underestimated the relationship between the two positive items and the relationship between the two negative items. At follow-up, there was similar pattern.

The scale of Publicness did not meet both criteria at baseline. All items were positively worded. The items "The fact that I have this goal is common knowledge" and "It is widely known that I have this goal" formed a large positive standardised residual, as did the items "It is a public fact that I have this goal" and "Many people know that I have this goal". All the other standardised residuals were large and negative.

The scale of Time did not meet both criteria at baseline. It contained one positively worded item and three negatively worded items. The one positively worded item "I have enough time in which to complete this goal" formed a large positive standardised residual with "There is insufficient time in which to achieve this goal". The other two items "The deadline for completing this goal is unrealistic" and "I will be pushed for time to achieve this goal" formed a large negative standardised residual.

The scale of Tools did not meet both criteria at baseline. The scale contained two positively worded items and two negatively worded items. The two positively worded items ("I have the necessary tools to achieve this goal" and "I have enough resources to achieve this goal") formed a large positive standardised residual, as did the two

negatively worded items ("I am inhibited by lack of materials to complete this goal" and "I have a shortage of tools in respect of this goal"). Additionally, "I am inhibited by lack of materials to complete this goal" and "I have the necessary tools to achieve this goal" formed a large positive standardised residual, as did "I have enough resources to achieve this goal" and "I have a shortage of tools in respect of this goal".

The scale of Conflict did not meet both criteria at follow-up. It contained three positively worded items and one negatively worded item. The one negatively worded item "This goal fits in well with my other goals", formed a large negative standardised residual with "This goal seems to contradict the purpose of my other goals". The other two items, "This goal conflicts with some of my other goals", and "This goal clashes with my other goals" formed a large positive standardised residual.

The scale of Importance to Others did not meet both criteria at follow-up. It contained one positively and three negatively worded items. The positively worded item "It matters to other people that I achieve this goal" formed a large negative standardised residual with "Other people are unconcerned whether I achieve this goal. The other two items "Other people think this goal is trivial" and "Other people think this goal is of little consequence" formed a large positive residual.

The scale of Origin did not meet both fit criteria at follow-up. It contained three positively and one negatively worded items. The negatively worded item "This goal was set for me" formed a large negative standardised residual with "I set this goal for myself" and a large positive standardised residual with "I selected this goal". The item "I chose to have this goal" formed a large negative standardised residual with "I set this goal for myself" and a large positive standardised residual with "I selected this goal".

Overall, factor loadings were high. At baseline, 91 of the 100 loadings were .50 or above in absolute size. At follow-up, 90 of the 100 loadings were .50 or above in absolute size. No loadings were below .30 in absolute size, except for the loading of "Other people undermine my efforts to achieve this goal" on the Support scale at baseline, which was -.22.

Paired Confirmatory Factor Analyses

Table 6 (below the diagonal) details the results of the paired scale confirmatory factor analyses of the baseline data. The CFI and SRMR are shown for each pairing. Of the 300 pairings, 197 met both fit criteria, and 293 met at least one of the criteria. Those single scales that had produced inadequate fit statistics in the single factor models (i.e., Control, Publicness, Time, and Tools) tended to produce inadequate fit statistics when paired with other scales. There were 210 pairings that did not include Control, Publicness, Time, or Tools. Of these 210 pairings, 170 met both fit criteria, and 40 did not. In all of these 40 pairings, one or both scales contained oppositely worded items.

Table 6 (above the diagonal line) details the results of the paired scale confirmatory factor analyses of the follow-up data. Of the 300 pairings, 231 met both fit criteria, and 292 met at least one of the criteria. Those single scales that had produced inadequate fit statistics in the single factor models (Conflict, Control, Importance to Others, and Origin) tended to produce inadequate fit statistics when paired with other scales. There were 210 pairings that did not include Conflict, Control, Importance to Others, or Origin. Of these 210 pairings, 194 met both fit criteria, and 16 did not. In all but one of these 16 pairings, one or both scales contained oppositely worded items.

Table 6.

Fit statistics for two factor confirmatory factor analyses of goal perception scales at baseline and at follow-up

Scale	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
1. Ability	--	.97	.97	.95	.91	.95	.98	.95	.98	.99	.99	1.00	.95	1.00	.96	.92	.98	.97	1.00	.94	1.00	.97	.98	.96	.97
	--	.05	.05	.08	.09	.06	.07	.07	.07	.04	.05	.04	.06	.04	.06	.08	.05	.04	.05	.06	.05	.06	.05	.05	.06
2. Commitment	.97	--	.99	.96	.95	.94	.98	.98	.99	.97	.99	.98	.96	1.00	1.00	.95	.96	.97	.99	.98	.99	.98	.96	.97	.95
	.04	--	.04	.08	.09	.08	.05	.05	.05	.05	.04	.06	.07	.04	.04	.09	.07	.06	.04	.05	.04	.04	.06	.05	.04
3. Competition	.95	.97	--	1.00	.96	.95	1.00	.96	1.00	.98	.99	1.00	.96	.98	1.00	.97	.99	.99	.94	.97	.94	.99	1.00	.98	1.00
	.07	.05	--	.04	.07	.07	.05	.07	.04	.04	.08	.03	.06	.05	.03	.04	.05	.03	.09	.07	.09	.04	.05	.06	.04
4. Complexity	1.00	.96	.97	--	.91	.88	.96	.98	.93	.96	.95	.97	.93	.95	.98	.95	.90	.93	.94	.95	.94	.98	.96	.91	.97
	.05	.10	.07	--	.09	.08	.05	.06	.08	.07	.07	.06	.08	.07	.07	.06	.09	.07	.06	.07	.06	.06	.06	.08	.07
5. Conflict	.96	.98	.96	.97	--	.78	.97	.97	.98	.92	.92	.97	.90	.88	.98	.93	.88	.96	.89	.90	.89	.97	.96	.92	.93
	.06	.05	.08	.05	--	.14	.07	.07	.06	.12	.10	.09	.09	.11	.06	.07	.09	.07	.09	.09	.09	.06	.06	.07	.10
6. Control	.92	.92	.93	.84	.86	--	.92	.90	.91	.91	.92	.97	.87	.91	.91	.92	.92	.94	.88	.92	.88	.94	.92	.91	.94
	.07	.08	.09	.09	.11	--	.09	.09	.10	.08	.09	.05	.08	.06	.06	.06	.07	.06	.07	.06	.07	.07	.06	.07	.07
7. Difficulty	.99	.98	.99	.94	.99	.94	--	.98	.98	.99	.96	1.00	.97	.99	.98	.96	.99	.99	.97	.97	.97	1.00	.98	.98	1.00
	.05	.06	.04	.06	.04	.09	--	.05	.05	.04	.07	.02	.05	.05	.04	.05	.05	.05	.05	.06	.05	.03	.06	.04	.04
8. Divisibility	.98	.97	.96	.96	.96	.89	1.00	--	.97	.96	.98	1.00	.96	.95	.96	.97	1.00	.99	.98	.98	.98	1.00	.99	.99	.99
	.04	.05	.05	.07	.06	.08	.03	--	.06	.05	.05	.03	.08	.08	.05	.05	.06	.03	.05	.06	.05	.03	.05	.05	.05
9. Effort	.99	.97	.98	.93	.97	.93	.98	.99	--	.98	.97	.99	.96	.99	.95	.93	.98	.97	.95	.95	.95	.98	.95	.98	.99
	.07	.04	.04	.07	.06	.08	.05	.04	--	.06	.06	.04	.07	.05	.10	.05	.07	.05	.07	.08	.07	.05	.09	.05	.05
10. Enjoyment	.95	.95	.96	.93	.93	.86	.98	.96	.97	--	.97	.99	.93	.96	.99	.95	.97	.96	.98	.96	.98	.98	.97	.97	.96
	.05	.07	.07	.08	.08	.09	.04	.06	.04	--	.05	.04	.10	.06	.03	.07	.06	.07	.04	.05	.04	.04	.04	.05	.04
11. Feedback	.99	.98	.95	.98	.96	.94	.99	.94	.99	.96	--	1.00	.92	.95	1.00	.93	.99	.98	.88	.95	.88	.99	.98	.97	.99
	.03	.04	.09	.06	.06	.07	.04	.07	.05	.05	--	.04	.11	.09	.03	.07	.06	.05	.09	.08	.09	.06	.06	.07	.05
12. Fixedness	.97	.97	.98	.99	.93	.95	.99	.97	.98	.94	.98	--	.97	.99	.99	.97	1.00	.98	1.00	.98	.99	.98	1.00	.97	.99
	.06	.03	.05	.05	.11	.07	.04	.04	.03	.06	.05	--	.05	.06	.05	.05	.04	.05	.04	.05	.04	.05	.04	.05	.06
13. Importance to Others	.93	.97	.95	.96	.92	.86	.99	.95	.98	.95	.94	.97	--	.97	.98	.91	.91	.97	.81	.94	.81	.97	.94	.86	.93
	.08	.07	.07	.05	.06	.09	.05	.06	.05	.06	.08	.05	--	.06	.06	.09	.08	.05	.09	.07	.09	.07	.07	.09	.08
14. Measurability	.98	.97	.94	.93	.98	.90	.97	.91	.97	.94	.94	.98	.94	--	.97	.94	.98	1.00	.95	.99	.95	.99	1.00	.98	.98
	.06	.05	.08	.08	.06	.07	.05	.09	.06	.07	.09	.04	.06	--	.05	.05	.05	.03	.07	.04	.07	.03	.03	.05	.04
15. Options	1.00	1.00	.98	.98	.98	.96	.99	1.00	.97	.99	.98	.99	.98	.99	--	.95	1.00	.99	.98	.96	.98	.98	.99	.99	.98
	.04	.03	.04	.04	.08	.06	.04	.04	.04	.03	.07	.04	.06	.04	--	.07	.03	.04	.06	.04	.06	.05	.04	.05	.04
16. Origin	.98	1.00	.98	.98	.95	.93	1.00	.98	1.00	.97	.96	.99	.94	.98	1.00	--	.95	.93	.95	.93	.95	.95	.95	.93	.93
	.05	.03	.04	.06	.09	.07	.04	.05	.03	.04	.07	.03	.09	.05	.04	--	.05	.09	.05	.08	.05	.07	.05	.08	.07
17. Progress	1.00	1.00	.98	1.00	.98	.93	.99	.98	.98	.99	.98	1.00	.96	.97	.99	.97	--	.96	.98	.94	.98	.98	.95	.98	.97
	.04	.03	.05	.05	.04	.06	.05	.04	.05	.03	.04	.03	.06	.06	.04	.05	--	.07	.05	.07	.05	.07	.06	.05	.07

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Scale	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
18. Publicness	.88	.90	.90	.86	.89	.84	.92	.90	.92	.90	.91	.91	.84	.87	.90	.91	.89	--	.98	.99	.98	.98	.97	.99	.96
	.06	.06	.06	.07	.06	.07	.05	.05	.06	.05	.05	.05	.09	.07	.06	.06	.05	--	.04	.03	.04	.05	.05	.04	.07
19. Specificity	.96	.96	.98	.92	.97	.90	.97	.95	1.00	.95	.96	.98	.88	.98	.97	.96	.97	.87	--	.94	.94	1.00	.97	.99	.96
	.05	.06	.04	.08	.05	.07	.05	.07	.04	.05	.05	.06	.07	.04	.05	.07	.04	.06	--	.06	.06	.04	.07	.05	.05
20. Success Expectation	.98	.97	.97	.95	.95	.88	.95	.96	.97	.95	.96	.97	.92	.97	.97	.97	.96	.90	.95	--	.96	.97	.97	.96	.94
	.04	.04	.04	.05	.05	.08	.06	.06	.05	.05	.05	.05	.07	.05	.04	.04	.05	.06	.05	--	.05	.05	.06	.05	.07
21. Support	.98	.97	.94	1.00	.91	.81	.98	.96	.98	.93	.95	.96	.81	.92	.98	.98	.99	.86	.96	.94	--	.99	.98	.95	.98
	.06	.06	.10	.05	.09	.11	.05	.07	.05	.06	.06	.07	.10	.10	.07	.06	.05	.07	.06	.06	--	.07	.04	.07	.04
22. Teamwork	.97	.99	.97	.95	.99	.92	.98	.97	.98	.96	.97	.99	.95	.97	.98	.99	.99	.89	.98	.98	.93	--	.97	.97	.99
	.05	.03	.04	.06	.04	.10	.04	.07	.05	.06	.07	.04	.09	.05	.06	.04	.03	.06	.05	.04	.10	--	.06	.05	.03
23. Time	.97	.96	.93	.85	.93	.89	.98	.95	.92	.96	.97	.96	.90	.93	.98	.97	.99	.87	.93	.94	.92	.97	--	.95	.98
	.05	.07	.06	.08	.06	.07	.05	.05	.10	.06	.06	.05	.06	.07	.05	.04	.04	.06	.06	.05	.06	.04	--	.06	.05
24. Tools	.91	.98	.96	.94	.95	.89	.97	.96	.96	.91	.94	.98	.95	.93	.97	.94	.97	.85	.91	.95	.91	.97	.92	--	.96
	.08	.04	.05	.05	.05	.07	.04	.05	.04	.06	.07	.05	.05	.06	.04	.06	.04	.08	.06	.05	.08	.05	.06	--	.06
25. Value	.92	.94	.95	.91	.92	.89	.97	.94	.93	.94	.97	.98	.94	.93	.98	.95	.97	.88	.91	.94	.95	.96	.95	.93	--
	.06	.05	.05	.09	.09	.08	.05	.06	.06	.05	.05	.03	.05	.06	.03	.06	.04	.06	.06	.05	.05	.04	.06	.06	--

Note. Baseline N = 187 to 201. Follow-up N = 152 to 160. Baseline statistics are below the diagonal, follow-up statistics above. In each cell, the upper figure is the Comparative Fit Index, the lower figure the Standardised Root Mean Square Residual. Values are italicised if they satisfy the fit criterion.

The correlations between factors ranged from -.79 to .71 for the baseline data, and from -.80 to .86 for the follow-up data. In all models, baseline and follow-up, the 95% confidence interval for the correlations between factors did not include the value 1.00.

Oppositely/Negatively Worded Items

Eighteen scales contained a mixture of positively and negatively worded items. Nine scales contained three positively and one negatively worded items: Ability, Conflict, Difficulty, Divisibility, Enjoyment, Feedback, Origin, Support, and Value. Six scales contained two negatively and two positively worded items: Complexity, Control, Progress, Specificity, Success Expectation, and Tools. Three scales contained one positively and three negatively worded items: Importance to Others, Measurability, and Time. The remaining scales (Commitment, Competition, Effort, Fixedness, Options, Publicness, and Teamwork) contained either four positively worded items or four negatively worded items. The presence of oppositely worded items within a scale tended to detract from fit in the confirmatory factor analyses. Positively worded items tended to produce large positive residuals with other positively worded items, as did negatively worded items with other negatively worded items. It is notable that, in the single factor confirmatory factor analyses (Table 5), where a scale contained one item worded in the opposite direction to the other three items, that one item tended to have the lowest factor loading. This was true for 11 of 12 scales at baseline, and 10 of 12 scales at follow-up.

Descriptive Statistics and Reliabilities for the Scales

Table 7 shows the descriptive statistics for the scales. For the baseline data, the means for the scales ranged from 2.00 to 4.42 and skewness ranged from -1.70 to 0.70. Commitment and Value were the only scales with a skewness greater than 1.00, at -1.70 and -1.38 respectively. For the follow-up data, means ranged from 2.12 to 4.29,

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and skewness ranged from -0.93 to 0.70. For the baseline data, the scales produced alpha coefficients ranging from .65 to .90. Complexity, Importance to Others, and Support were the only scales with alpha coefficients less than .70. For Complexity, alpha would increase from .68 to .69 if "This goal requires detailed planning" were to be omitted. For Importance to Others, alpha would not increase from .68 by deleting any item. For Support, alpha would increase from .65 to .73 if "Other people undermine my efforts to achieve this goal" were to be omitted. At follow-up, the scales produced coefficient alphas ranging from .62 to .91. Support was the only scale with an alpha coefficient less than .70. For Support, alpha would increase from .62 to .65 if "Other people undermine my efforts to achieve this goal" were to be omitted. It is notable that the scales with alpha coefficients below .70 nevertheless met both fit criteria. Conversely, the scales that did not meet both fit criteria nevertheless had alpha coefficients above .70.

Table 7.

Descriptive Statistics for Goal Perception Questionnaire Scales at Baseline and Follow-up

Scale	Baseline				Follow-up				Test-retest
	M	SD	Skewness	Cronbach's α	M	SD	Skewness	Cronbach's α	r
Ability	4.11	0.68	-0.46	.77	4.08	0.62	-0.26	.73	.56
Commitment	4.41	0.67	-1.70	.89	4.29	0.67	-0.93	.90	.63
Competition	2.77	1.11	0.08	.90	2.77	1.09	0.16	.91	.72
Complexity	3.43	0.84	-0.53	.68	3.46	0.81	-0.26	.76	.65
Conflict	2.00	0.71	0.70	.77	2.13	0.68	0.70	.75	.42
Control	3.71	0.80	-0.49	.73	3.68	0.73	-0.52	.76	.71
Difficulty	3.55	0.95	-0.62	.88	3.50	0.88	-0.31	.89	.59
Divisibility	3.43	0.97	-0.59	.84	3.52	0.93	-0.52	.89	.68
Effort	3.72	0.85	-0.83	.86	3.65	0.79	-0.53	.82	.74
Enjoyment	3.95	0.81	-0.68	.86	3.81	0.82	-0.66	.89	.70
Feedback	3.10	0.88	-0.14	.84	3.14	0.80	-0.20	.79	.57
Fixedness	2.99	1.08	-0.23	.88	2.86	1.00	0.02	.86	.52
Importance to Others	3.46	0.85	-0.43	.69	3.47	0.79	-0.17	.80	.70
Measurability	3.41	0.81	-0.25	.77	3.45	0.78	-0.23	.80	.65
Options	3.33	0.94	-0.49	.89	3.35	0.87	-0.59	.88	.64
Origin	3.34	1.16	-0.35	.86	3.56	1.03	-0.53	.87	.68
Progress	3.50	0.88	-0.40	.83	3.40	0.81	-0.42	.78	.54
Publicness	3.48	1.03	-0.21	.89	3.63	0.99	-0.40	.91	.54
Specificity	4.01	0.76	-0.69	.73	3.96	0.67	-0.53	.71	.63
Success Expectation	4.01	0.82	-0.79	.87	3.98	0.71	-0.73	.81	.46
Support	3.54	0.75	-0.64	.65	3.51	0.66	-0.10	.62	.59

Scale	Baseline				Follow-up				Test-retest
	M	*SD*	Skewness	Cronbach's α	*M*	*SD*	Skewness	Cronbach's α	r
Teamwork	3.78	0.99	-0.93	.86	3.66	1.00	-0.66	.89	.70
Time	3.48	0.88	-0.60	.75	3.49	0.81	-0.48	.80	.51
Tools	3.77	0.77	-0.47	.78	3.75	0.75	-0.67	.81	.55
Value	4.35	0.71	-1.38	.87	4.26	0.66	-0.90	.87	.68

Note. N = 196 at baseline, 154 at follow-up, 114 for test-retest, by listwise deletion for missing values.

Age, Gender, Response To Follow-Up, Achievement of Goal by Follow-Up, and Goal Category

Relationships of baseline variables with age, with gender, with whether or not the individual responded to follow-up, and with whether or not the individual had achieved their goal by follow-up, are shown in Table 8, in the form of correlations. At the .01 level, age correlated positively with Teamwork. Gender did not correlate significantly with any scale. Response to follow-up did not correlate with any scale. Achievement of goal by follow-up correlated negatively with Origin, suggesting that those who originated their goals were less likely to have achieved them by follow-up.

Table 8.

Relationships of Goal Perception Questionnaire Scales at Baseline with Age, Gender, Response to Follow-Up, Achievement of Baseline Goal at Follow-Up, and Goal Category

	Correlations				ANOVA $\underline{M}$ (SD)			
Scale	With age ($\underline{N}$ = 191)	With gender[a] ($\underline{N}$ = 191)	With response to follow-up[b] ($\underline{N}$ = 196)	With achievement of baseline goal at follow-up[c] ($\underline{N}$ = 149)	Work-specific goals ($\underline{n}$ = 110)	Career advancement goals ($\underline{n}$ = 33)	Training/ qualification goals ($\underline{n}$ = 32)	$\underline{F}$(2, 172)
Ability	-.08	.09	.04	.16	4.22(0.62)	4.08(0.65)	3.97(0.79)	2.11
Commitment	.06	.04	.13	.12	4.48(0.58)	4.41(0.57)	4.50(0.60)	0.21
Competition	-.05	-.06	-.02	-.15	2.52(1.01)	3.83(0.83)	2.63(1.12)	22.15**
Complexity	-.05	-.05	-.02	-.06	3.60(0.81)	3.05(0.79)	3.70(0.68)	7.39**
Conflict	.05	-.15*	.01	.06	1.97(0.72)	1.96(0.66)	1.84(0.68)	0.42
Control	-.12	.05	.00	.01	3.83(0.73)	3.52(0.87)	3.73(0.90)	1.98
Difficulty	.04	-.11	.01	.05	3.64(0.91)	3.41(0.91)	3.85(0.83)	2.03
Divisibility	-.09	-.03	.09	-.10	3.60(0.94)	3.23(1.00)	3.41(0.91)	2.12
Effort	-.13	-.05	.10	-.03	3.74(0.80)	3.92(0.68)	4.09(0.59)	3.02
Enjoyment	.05	.02	-.03	-.01	4.02(0.82)	3.89(0.73)	3.91(0.85)	0.45
Feedback	-.06	.12	.05	.08	3.27(0.85)	3.01(0.81)	2.91(0.91)	2.81
Fixedness	-.06	.03	.05	-.14	2.93(1.19)	3.30(0.82)	2.80(0.93)	2.04
Importance to Others	-.10	.04	.13	.17*	3.69(0.79)	3.33(0.76)	3.21(0.88)	5.70**
Measurability	-.01	.06	-.05	.17*	3.66(0.78)	2.96(0.64)	3.33(0.76)	11.41**
Options	.08	-.02	.12	-.09	3.42(1.00)	3.38(0.85)	3.02(0.93)	2.17
Origin	-.17*	-.04	.03	-.30**	2.81(1.08)	4.31(0.56)	3.86(1.01)	35.54**
Progress	-.08	.05	.01	.19*	3.59(0.84)	3.40(0.87)	3.48(1.08)	0.61
Publicness	.05	.09	.09	.17*	3.60(0.98)	3.28(1.00)	3.31(1.14)	1.81

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Specificity	.06	.07	.05	.05	4.04(0.72)	4.11(0.72)	4.09(0.79)	0.15
Success Expectation	-.18*	.09	.03	.14	4.08(0.78)	3.93(0.76)	4.21(0.81)	1.05
Support	-.08	.05	.14	.12	3.63(0.62)	3.45(0.91)	3.66(0.83)	0.94
Teamwork	.22**	.02	.06	.10	4.13(0.92)	3.26(0.80)	3.41(1.00)	15.65**
Time	-.17*	.08	.01	-.03	3.29(0.95)	3.92(0.71)	3.63(0.58)	7.63**
Tools	-.02	.03	-.06	.08	3.72(0.82)	3.87(0.66)	3.87(0.74)	0.76
Value	-.02	-.02	.04	-.16	4.25(0.69)	4.48(0.51)	4.63(0.55)	4.98**

Note. [a]Positive value indicates females higher than males. [b]Positive value indicates responders higher than nonresponders. [c]Positive value indicates achievers higher than nonachievers.

*p < .05. ** p < .01.*

Gender differences on the 25 scales were examined. A MANOVA was not possible because diagnostics indicated possible violation of the assumption of homogeneity of covariance matrices. Therefore, separate t-tests were conducted. At the .01 level, there were no significant gender differences at baseline, but females were higher on Time at follow-up, $\underline{t}(153) = -2.96, p = .004$. At the .01 level, age was positively correlated with Teamwork at baseline ($\underline{r} = .24, N = 191, p = .002$) and at follow-up ($\underline{r} = .24, N = 154, p = .003$).

The goals were categorized into five types: Work-Specific, i.e., specific tasks within the workplace ($n = 112$); Career Advancement ($n = 33$); Training/Qualification ($n = 33$); Job or Life Satisfaction ($n = 8$); Miscellaneous ($n = 15$). Cohen's kappa for inter-rater reliability was .89, $p < .001$. The numbers in the last two categories were particularly low, so they were omitted from the subsequent analysis. The relationships of baseline variables with goal type are shown in Table 8, in the form of ANOVAs. The three categories differed significantly (at the .01 level) on Competition, Complexity, Importance to Others, Measurability, Internal Origin, Teamwork, Time, and Value. In Scheffé follow-up tests (at the .01 level), Career Advancement goals involved more Competition than did Work-Specific or Training/Qualifications goals. Work-Specific and Training and Qualification goals had greater Complexity than did Career Advancement goals. Work-Specific goals had greater Measurability than did Career Advancement goals. Career Advancement and Training/Qualification goals were more likely to have been chosen by the individual than Work-Specific goals. Work-Specific goals involved more Teamwork than did Career Advancement and Training/Qualification goals. Career Advancement goals involved greater Time than Work-Specific goals.

Correlations Among Scale Scores

The correlations among goal scale scores are shown in Table 9. The correlations of particular interest are those relating to the hypotheses.

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It was predicted that Value and Success Expectation would correlate with Commitment, and this is what was found. It was predicted that Value would correlate with Competition, Conflict, Enjoyment, Importance to Others, Origin, Publicness, and Specificity. It was found that Value correlated significantly (at the .01 level) with Conflict, Enjoyment, Importance to Others (follow-up only), Origin, Publicness, and Specificity, but not Competition. Value also correlated significantly with several other variables: Ability, Complexity (follow-up only), Control, Difficulty, Effort, Measurability (follow-up only), Progress, Support, Teamwork (follow-up only), Time, and Tools. It was predicted that Success Expectation would correlate with Ability, Complexity, Control, Difficulty, Divisibility, Effort, Feedback, Fixedness, Measurability, Options, Progress, Support, Teamwork, Time, and Tools. It was found that Success Expectation correlated significantly with Ability, Control, Divisibility (follow-up only), Feedback, Measurability, Options (follow-up only), Progress, Support, Time, and Tools, but not Complexity, Difficulty, Effort, Fixedness, or Teamwork. Success expectation also correlated significantly with several other variables: Competition (follow-up only), Conflict, Enjoyment, Importance to Others, Publicness (follow-up only), and Specificity.

For those individuals who, at follow-up, were working towards the same goal as at baseline (n =114), the test-retest correlations ranged from .42 for Conflict to .74 for Effort (see Table 7).

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Table 9.
Correlations between Goal Perception Questionnaire Scales at Baseline and at Follow-up

Scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Ability	--	.55**	.03	.00	-.37**	.32**	-.06	.17*	.01	.39**	.13	.03	.28**	.30**	.07	.15	.32**	.20*	.35**	.45**	.29**	.24**	.16
2. Commitment	.47**	--	-.01	.30**	-.41**	.35**	.25**	.08	.30**	.54**	.25**	.07	.30**	.27**	.19*	.18*	.35**	.29**	.54**	.60**	.41**	.33**	.22**
3. Competition	-.06	.03	--	-.03	.17*	-.23**	.18*	-.15	.31**	-.17*	-.17*	-.09	-.32**	-.36**	.04	.07	-.18*	-.07	.01	-.26**	-.31**	.04	-.13
4. Complexity	-.09	.10	.12	--	.00	.18*	.68**	.27**	.53**	.25**	.12	.09	.19*	.13	.16*	-.10	.02	.14	.03	.21*	.15	.24**	-.21**
5. Conflict	-.45**	-.44**	.12	.07	--	-.35**	.01	-.20*	-.09	-.34**	-.30**	.09	-.30**	-.23**	-.15	-.17*	-.16*	-.26**	-.40**	-.42**	-.47**	-.02	-.31**
6. Control	.31**	.39**	-.15*	.15*	-.31**	--	.02	.31**	.12	.53**	.33**	-.19*	.44**	.57**	.28**	.10	.60**	.10	.26**	.60**	.51**	.07	.28**
7. Difficulty	-.12	.17*	.19**	.67**	.01	-.02	--	.19	.70**	-.04	.04	.11	.04	-.03	.13	.01	-.13	.09	.19*	.04	-.03	.17*	-.19*
8. Divisibility	-.05	-.06	-.06	.32**	.04	.23**	.22**	--	.24**	.20*	.19*	-.22**	.27**	.23**	.38**	-.16*	.11	.11	.12	.28**	.24**	.29**	-.04
9. Effort	.00	.25**	.43**	.50**	-.06	.06	.63**	.25**	--	.04	.04	.05	.07	.03	.16*	.04	-.09	.14	.28**	.13	.09	.15	-.12
10. Enjoyment	.35**	.52**	.03	.16*	-.34**	.44**	.16*	.18*	.18*	--	.26**	-.23**	.37**	.34**	.25**	.29**	.54**	.15	.13	.46**	.51**	.31**	.15
11. Feedback	.08	.15*	-.03	.20**	-.01	.30**	.13	.17*	.05	.18*	--	-.11	.34**	.38**	.24**	-.06	.41**	.31**	.11	.36**	.54**	.10	.23**
12. Fixedness	.09	.07	-.19*	.15*	-.06	-.04	.14*	-.20**	-.05	-.08	.00	--	.04	-.02	-.34**	-.21**	-.02	.26**	.15	.02	-.08	-.11	.04
13. Importance to Others	.20**	.13	-.14	.14	-.16*	.32**	.15*	.13	.10	.11	.31**	.09	--	.46**	.17*	-.12	.42**	.33**	.25**	.47**	.57**	.04	.17*
14. Measurability	.35**	.31**	-.30**	.06	-.24**	.53**	-.05	.19**	.00	.30**	.38**	.08	.25**	--	-.04	-.01	.38**	.19*	.33**	.47**	.38**	-.05	.12
15. Options	.04	.12	.21**	.12	-.01	.19**	.09	.46**	.17*	.26**	.02	-.26**	.04	-.05	--	.03	.21*	.12	-.01	.23**	.22**	.28**	.11
16. Origin	.13	.18	.30**	-.14*	-.23**	.12	-.08	-.06	.10	.29**	-.21**	-.27**	-.25**	-.09	.11	--	.05	-.10	.19*	.03	.02	-.15	.24**
17. Progress	.32**	.38**	-.08	-.05	-.15*	.51**	-.13	.14	-.06	.43**	.42**	.05	.29**	.45**	.07	.04	--	.21*	.07	.44**	.50**	.12	.32**
18. Publicness	.19**	.21**	-.02	.01	-.05	.02	.04	-.05	.05	.17*	.22**	.20**	.18*	.17*	.03	-.08	.16*	--	.22**	.26**	.32**	.10	.15
19. Specificity	.40**	.49**	-.01	-.03	-.46**	.24**	.07	-.17*	.13	.30**	.18*	.28**	.21**	.35**	-.17*	.02	.16*	.31**	--	.35**	.19*	.01	.28**
20. Success Expectation	.41**	.63**	-.11	-.06	-.35**	.53**	-.10	.01	.02	.31**	.30**	.06	.25**	.42**	.07	.09	.52**	.06	.30**	--	.54**	.13	.39**

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21. Support	.17*	.28**	-.11	.23**	-.19**	.41**	.19**	.28**	.10	.35**	.57**	-.02	.46**	.31**	.10	-.08	.48**	.10	.16*	.36**	--	.13	.30**
22. Teamwork	.00	.14	-.07	.21**	-.03	.00	.26**	.13	.13	.21**	.13	.00	.04	.03	.27**	-.24**	-.02	.26**	.06	-.08	.14	--	-.20**
23. Time	.16*	.19	.02	-.37**	-.26**	.13	-.25**	-.28**	-.23**	.05	.08	.12	.03	.05	-.01	.21**	.25**	.04	.14	.37**	.10	-.10	--
24. Tools	.31**	.32**	-.16*	-.10	-.31**	.27**	-.06	-.11	-.08	.23**	.13	.23**	.22**	.24**	-.06	.08	.25**	.07	.38**	.35**	.23**	-.20**	.37**
25. Value	.34**	.67**	.16*	.13	-.42**	.33**	.20**	-.02	.28**	.64**	.08	-.08	.02	.17	.16*	.42**	.25**	.23**	.40**	.29**	.20**	.14	.19**

Note. Baseline $N = 196$, follow-up $N = 154$, by listwise deletion for missing values. Baseline correlations below diagonal, follow-up correlations above.

*p < . 05. **p < .01

Discussion

Overall, the 25 scales of the Goal Perceptions Questionnaire showed good psychometric properties. The single and two factor models generally met Hu and Bentler's (1999) fit criteria and the scales generally had adequate coefficient alphas. Where there were problems with the scales, the reasons were usually apparent. Diagnosis of problems was easier because of the approach that was adopted, which involved a sequential (hypothesis testing) approach to model testing, and close attention to diagnostic information.

Scales that contained both positively and negatively worded items tended to not fit as well, even though they generally had adequate coefficient alphas. When psychological rating scales contain positively and negatively worded items, factor analysis of responses to those items frequently results in the formation of distinct factors reflecting the positive and negative items (Schmitt & Stults, 1985; Marsh, 1996). A relatively high level of alpha can be obtained even when there is more than one underlying factor (Schmitt, 1996), therefore the problem of using both positively and negatively worded items in one scale often goes undetected. Schmitt and Stults (1985) have suggested that the appearance of negative factors may simply be a result of respondents failing to spot the negative-positive wording of items. However, it may be that the positively and negatively worded items do not represent opposite ends of the same construct but are actually measuring slightly different (although related) constructs.

The scale of Control was the only scale that failed to meet both the fit criteria on both occasions. The residuals suggested that the model underestimated the relationship between the two positively worded items and the relationship between the two negatively worded items. The positively worded items refer to being in "control" and "command", whereas the negatively worded items refer to being "helpless" and "powerless". It may be that control and helplessness are not opposite ends of the same construct. Indeed, Skinner (1996)

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has suggested that helplessness should be viewed as a potential *consequence* of lack of control. Therefore, the Control scale needs further refinement, clearly separating "prototypical personal control" (Skinner) from potential causes and consequences.

Although the scale of Support met the fit criteria at baseline and follow-up, one item had a particularly low factor loading and the scale had relatively low coefficient alpha. The scale contains three positively and one negatively worded items. It was the negatively worded item ('Other people undermine my efforts to achieve this goal') that was problematic. This item seems to reflect the presence of a malevolent influence rather than the mere absence of positive support. The item clearly needs replacing.

Some other scales that contained both positively and negatively worded items failed to meet both fit criteria at baseline or at follow-up. However, for these scales (unlike the scales of Control and Support) there was no suggestion that different constructs were present in the same scale. There is merit in including both positively and negatively worded items in a scale, because this protects against an acquiescent response style. However, negatively worded items need to be written with care, to ensure that different constructs are not inadvertently introduced. The scales should then be subjected to rigorous analyses, of the kind that were employed in this research.

For those individuals who were referring to the same goal at baseline and follow-up, test-retest correlations were low to moderate for most scales. Goal perceptions are likely to vary not only between persons and goals but also across time (Austin & Vancouver, 1996). Thus, moderate test-retest correlations are to be expected and are not indicative of low measurement reliability.

The procedure used to classify was simple and pragmatic as indeed were the relationships that emerged. For example, career

advancement goals compared with work-specific goals involved less teamwork but more competition, were less complex, less measurable, there was more time to achieve them, and they were goals that were chosen by the individual. These results suggest different types of goals exhibit different characteristics. It may be that certain characteristics associated with particular types of goals may or may not facilitate goal achievement. For example, individuals may be better off focusing on lower order goals such as work specific goals in order to achieve higher level goals such as career advancement. Bandura (1989) suggests that breaking down goals into sub goals may sustain motivation in the progress towards attainment of superordinate goals, and sub goal achievement may generate self-satisfaction from personal accomplishments that operates as its own reward during the pursuit of higher level goals.

Significant (0.01 level) correlations are mainly consistent with the predictions based upon Hollenbeck and Klein's (1987) value expectancy model. As predicted, Value and Success Expectation correlated with Commitment, and scales that were predicted to correlate with Value or with Success Expectation did so, but with some exceptions. There was a significant correlation between Value and Success Expectation. This correlation might have arisen because the two variables have a common cause. For example, Ability correlated with both Value and Success Expectation, and might influence both variables. However, rather than the two variables having a common cause they may have a casual relationship. Kirsch (1985) found that individual's expectancy scores increased when incentives were offered, which suggests that the value of a goal can affect an individual's success expectation.

Contrary to the predictions, some dimensions correlated with Success Expectation instead of Value, or Value instead of Success Expectation, and some dimensions correlated with both Value and Success Expectation. For example, Difficulty, Complexity, and Effort

tended to produce significant correlations with Value rather than with Success Expectation, suggesting that individuals consider difficult goals of greater value. Previous researchers (e.g., Matsui, Okada, & Mizuguchi, 1981; Klein & Wright, 1994) have reported a similar relationship between value and goal difficulty. It could be that difficult goals are more valued because they require more effort to achieve, and/or because not everyone can achieve them. This reasoning may explain why Difficulty, Complexity, and Effort correlated with Value but not why these three scales failed to correlate (as predicted) with Success Expectation. The reason for this may be that, unless specifically instructed, individuals assess goal difficulty externally, that is to say without reference to their own capabilities. This phenomenon has been noted previously. Lee and Bobko (1992) suggested that subjective measures of difficulty might be either self-referenced (i.e., relative to personal abilities) or externally referenced (i.e., relative to the abilities of others in the work environment). They found that, whereas self-referenced measures of difficulty were related to self-efficacy, externally referenced measures were not. Future researchers must be clear about what they are trying to measure and provide explicit instructions to respondents to ensure they measure what they intend to.

Further discussion on the correlations is probably not appropriate, not least because of the number of correlations. For an extended examination (using structural equation modelling) and discussion of the relationships between goal perceptions and individuals' commitment to and feelings about their goals, readers are directed to Chapter Four.

This research took place in the workplace. However, the items for this questionnaire were written to measure goal perceptions in any context (e.g., work, sports, and learning). Further research in other contexts is needed to confirm that this questionnaire can be used as a generic measure. Although in this paper some evidence of construct validity

has been provided in the form of correlations between scales, clearly more evidence of construct validity is needed. Compared to previous instruments this questionnaire extends the number of dimensions measured. However, it is not suggested that these 25 scales represent an exhaustive set of dimensions on which goal perceptions may vary. In addition, by virtue of measuring 25 scales, this questionnaire is somewhat lengthy and so researchers may wish to use scales selectively according to whatever theory they are testing at the time. Overall, it is felt that considerable progress has been made in devising a measuring instrument suitable for exploring the relationships between goal perceptions and outcome variables of interest. In addition, the questionnaire could facilitate the evaluation of goal setting practices, at an individual or group level, leading ultimately to improved practices in goal setting.

CHAPTER 4

The Effect of Goal Perceptions on Commitment and Affects

Abstract

The aim was to clarify how individuals' perceptions of their work-related goals determined their commitment to and feelings about those goals. Participants ($N = 201$) completed the Goal Perceptions Questionnaire and an affects questionnaire with respect to how their goal made them feel. A model derived from theory and previous research was tested using structural equation modelling. The model fitted, with some minor modifications. Goal value and success expectation both positively influenced commitment. However, whereas value positively influenced positive affects, success expectation negatively influenced negative affects. The determinants of value were internal origin, complexity, specificity and publicness, and low conflict with other goals. The determinants of success expectation were personal control, ability, and time. It is concluded that, through astute goal-setting, it should be possible to enhance both commitment and well-being.

Introduction

The aim was to clarify how individuals' perceptions of their goals determine their commitment to and feelings about those goals. The context of research was the workplace.

Many organisations have formal goal-setting programmes, usually linked to performance appraisal. Even without a formal goal setting programme managers and subordinates are likely to generate goals that guide activity. The positive effects that such goals can have upon performance have been well documented (see Locke and Latham, 1990). In the relationship between goals and performance, goal commitment has emerged as a critical construct (Klein, Wesson, Hollenbeck, & Alge, 1999). In goal-setting studies, goal commitment was thought to moderate the effect of objective goal difficulty upon performance. Unfortunately, as Klein et al. observe, in many studies goal commitment has not been measured, or has been treated as a secondary variable, because the primary interest has been in objective goal difficulty.

Given that goal commitment is deemed to be a necessary condition for effective performance, its antecedents merit attention. Hollenbeck and Klein (1987) proposed a value-expectancy model in which the attractiveness of goal attainment and the expectancy of goal attainment are the proximal determinants of commitment, other variables exerting their influence upon commitment via their effect upon attractiveness and expectancy. Other value-expectancy models have included those of Locke et al. (1988), and Wofford et al. (1992). Such models, if substantiated, might be used in interventions to maximise goal commitment. In so doing, however, it is essential to also consider the concomitant effects of goals upon affective well-being.

There is considerable evidence that the subjective work environment can influence employees' health (Cox & Ferguson, 1994). This subjective work environment is likely to include individuals' perceptions of their work-related goals. Austin and Vancouver (1996) note several lines of research suggesting a relationship between goals and affects. Goals can have negative affective consequences (e.g., Emmons, 1992; Ivancevich, 1982; Lee, Bobko, Earley, & Locke, 1991; Locke & Latham, 1990), but they can also have positive affective consequences (Brunstein, 1993; Emmons, 1986; Little, 1989; Sheldon & Kasser, 1998). A complete model should simultaneously consider the antecedents of goal commitment and affects. In an ideal world, one would wish to maximise goal commitment whilst also maximising positive affect and minimising negative affect. Only by constructing a complete model will it be apparent whether this is possible, or whether, for example, maximising goal commitment is at the expense of decreasing positive affect, increasing negative affect, or both.

In building a testable model, a phenomenological perspective was adopted (Austin & Vancouver, 1996). In other words, this research is concerned with individuals' self-perceptions of their goals. Hollenbeck and Klein's (1987) goal commitment model was the starting point for this research. In Hollenbeck and Klein's model, attractiveness and expectancy, the proximal determinants of goal commitment, are themselves determined by various situational and personal factors. This research is concerned only with factors that could be classed as individual's perceptions of their goal, and not with more general factors such as personal traits or organisational structures. Thus, some of Hollenbeck and Klein's factors were omitted, some adopted, some, adapted and others renamed. Also incorporated in this research are certain factors highlighted by Lee et al. (1991) as important goal dimensions: difficulty, feedback, resources (separable into time and tools), and conflict.

The resulting model was one in which goal *value* (Hollenbeck &
Klein's, 1987, goal attractiveness) was influenced by *publicness*
(Hollenbeck & Klein), *origin* (Hollenbeck & Klein's volition),
specificity (Hollenbeck & Klein's explicitness), *competition*
(Hollenbeck and Klein), and *conflict* (Lee et al., 1991). Publicness
was the extent to which the individual perceived that other people
were aware of the goal; origin that they originated the goal; specificity
that the goal was precise; competition that they had to compete with
others to achieve the goal; conflict that the goal was in conflict with
their other goals. The determinants of success expectation were
complexity (Hollenbeck & Klein), *support* (cf. Hollenbeck and Klein's
supervisor supportiveness), *ability* (Hollenbeck and Klein), *control*
(cf. Hollenbeck and Klein's locus of control), plus *difficulty, feedback,
time,* and *tools* (Lee et al., cf. Hollenbeck & Klein's performance
constraints). Complexity was the extent to which the individual felt
that the goal was complicated; support that they were supported (from
any source) in achieving the goal; ability that they had sufficient
expertise to achieve the goal; control that they were in control of the
goal; difficulty that the goal was difficult; feedback that they received
sufficient feedback about progress towards the goal; time that they had
sufficient time to achieve the goal; tools that they had sufficient other
resources to achieve the goal.

To this value-expectancy model of goal commitment, affects were
added. In his study of "personal strivings" (superordinate goals),
Emmons (1986, 1989) found that whereas value was associated with
positive affect, lack of success expectation was associated with
negative affect. Based on these findings, the model was extended so
that value positively influenced positive affect and success expectation
negatively influenced negative affect. In so doing, however, it was
recognised that there has been considerable recent debate on the
structure and measurement of affect (see Diener, 1999). The first
issue to be resolved was whether the affects in the model should be

conceptualised as situationally specific or more detached. Warr (1994) distinguishes between context free and context specific approaches to well-being in the workplace. Since the measures of goal perceptions in this research were highly goal-specific, it seemed consistent that the measures of affects should be also be highly goal-specific. Therefore, it was decided that individuals should be asked how they felt about their goals, not simply how they felt. The second issue was whether positive and negative affects should be conceptualised as bipolar (opposite ends of the same continuum) or bivariate (separate continua). The model (value influencing positive affect and success expectation influencing negative affect) implied that positive and negative affects were separate dimensions. However, it was considered wise to test this empirically, even though the empirical pitfalls can be daunting (Green, Salovey, & Truax, 1999; Russell & Carroll, 1999a). Therefore, it was decided to measure positive and negative affects separately, but to examine empirically whether they should be combined in a bipolar fashion. The third issue was whether affects should be conceptualised as generalised or differentiated. Much of the debate about the relative merits of differing models of affect is conducted at the level of generalised affect, but most models incorporate more differentiated levels (Russell & Feldman Barrett, 1999). Therefore, it was decided to use both a generalised and differentiated measures of affect, and to examine empirically whether the more differentiated measures were useful or superfluous.

Thus, a structural model was built to examine the relationships between goal perceptions and goal-related affects. This model encapsulated the following hypotheses: (1) goal value and goal success expectation would both positively influence goal commitment; (2) value would positively influence positive affects; (3) success expectation would negatively influence negative affects; (4) value would be influenced by competition (negatively), conflict

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(negatively), control, internal origin, publicness, and specificity; (5) success expectation would be influenced by ability, complexity (negatively), control, difficulty (negatively), feedback, support, time, and tools; (6) these determinants of value and success expectation would not have direct effects upon commitment, positive affect or negative affect. Such an approach answers Austin and Vancouver's (1996, pp. 361-362) call for structural modelling of the relationships between goal dimensions, Klein et al.'s (1999, pp. 892-893) call for proper tests of the mediating role of value and success expectation in the determination of commitment, and the need for a simultaneous consideration of the effects on commitment and affects.

Method

Participants

Five local companies were approached: three privatised government utilities, a privatised government agency, and a car parts manufacturer. Of the employees of these companies, 201 agreed to participate. The participants comprised 45 females, 149 males, and 7 who did not reveal their gender. Ages ranged from 20 to 59 with a mean of 38.31 ($SD = 9.99$) years.

Measures

Goal Perceptions

The individual's perceptions of his or her goal were measured using the Goal Perceptions Questionnaire (GPQ). This instrument comprises 25 scales: Ability, Complexity, Competition, Commitment, Conflict, Control, Difficulty, Divisibility, Effort, Enjoyment, Feedback, Fixedness, Importance to Others, Measurability, Origin, Options, Progress, Publicness, Specificity, Support, Success Expectation, Time, Tools, Teamwork, and Value. Each scale comprises four items. Each item has a five-point response format ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The

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psychometric properties, instructions, and items are detailed in Chapter Three.

Affects

The individual's feelings about his or her goal were measured using items taken from two instruments. The Positive and Negative Affect Schedule (PANAS: Watson, Clark, & Tellegen, 1988) comprises two 10-item scales: Positive Affect and Negative Affect. It is a generalised measure of affect in which positive and negative affect are deemed to form separate dimensions. The Profile of Mood States (POMS) in its bipolar form (Lorr & McNair, 1988) comprises six 12-item scales: Hostile-Agreeable, Anxious-Composed, Elated-Depressed, Energetic-Tired, and Clearheaded- Confused. It is a more differentiated measure of affect in which each positive and negative affect pair is deemed to form a bipolar dimension. Certain POMS items were felt to be inapplicable or awkward when referring to goals, and for this reason the Clearheaded-Confused scale and the agreeable end of the Agreeable-Hostile continuum were omitted. The PANAS items and the chosen POMS items were intermingled, omitting any duplicates, to form a 59-item affects measure. A five-point response format, taken from Watson et al. (1988), was used: *very slightly or not at all, a little, moderately, quite a bit, extremely.*

Procedure

At baseline, each participant wrote down a current work-related goal, the date by which this goal should be achieved, and the length of time the goal would take altogether from start to finish. The participant then rated, on the GPQ, how he/she perceived the goal, and, on the affects measure, "how your goal makes you feel". Approximately three months later, each participant was reminded of his/her original goal, asked whether he/she had achieved that goal, and if not, whether he/she was still working towards it. Individuals who were still working towards their original goal were asked to complete the GPQ

and affects measure with reference to that goal. Individuals who had achieved their original goal or were no longer working towards it were asked to write down another current work-related goal, and to complete the GPQ and affects measure with reference to the new goal.

Analysis

The baseline data were subjected to a series of confirmatory factor analyses using LISREL version 8 (Jöreskog & Sorbom, 1993). This involved testing scales singly and in pairs to establish whether or not items were ambiguous and whether or not constructs overlapped. Such a sequential approach to model testing (see Jöreskog, 1993; Markland & Ingledew, 1997) provides good psychometric information. In addition using this approach avoids models that are too large in terms of sample size or too complicated in terms of being able to interpret the diagnostic information.

There is little consensus on what constitutes adequate fit in confirmatory factor analysis. A conservative approach is to look for χ^2 nonsignificant at the .05 level. However, this can be a difficult criterion to achieve because χ^2 increases with sample size. Therefore other popular fit indices are also reported: Root Mean Square Error of Approximation (RMSEA); Standardised Root Mean Square Residual (SRMR); Comparative Fit Index (CFI). Hu & Bentler (1999) describe the derivations and evaluate the performances of these and other fit indices. They suggest a cutoff value for RMSEA close to .06, for SRMR close to .08, and for CFI (or similar indices) close to .95. Furthermore, because different fit indices perform well under different conditions, Hu and Bentler advocate assessing fit in terms of a combination of two indices. For smaller sample sizes (less than 250) they advocate assessing fit in terms of SRMR close to .09 in combination with CFI (or similar index) close to .95. These were taken as the criteria for adequate fit.

Following these confirmatory factor analyses, for each scale the descriptive statistics (means, standard deviations, skewnesses, and Cronbach's alpha) were computed. The correlations of scales with age, with gender, with response to follow-up (nonresponder versus responder), and with achievement of baseline goal at follow-up (nonachiever versus achiever) were examined. The correlations between goal perceptions (GPQ) and affects (affects measure) were examined at baseline and at follow-up. The antecedents of value and success expectation, and the effects of value and success expectation upon commitment and affects, were examined using structural equation modelling. The relationships of value and success expectation with commitment and with affects over time were examined in a series of structural equation panel models.

Results

Confirmatory Factor Analysis

The confirmatory factor analyses of the goal perception (GPQ) scales are reported in Chapter Three. The confirmatory factor analyses of the affect scales are summarised in Table 10. The main objective of these analyses was to determine whether affects were best represented by unipolar or bipolar measures and by generalised or differentiated measures. Each bipolar POMS scale was first tested as a single factor model in which items from both poles of the scale loaded on one factor, for example the six Composed items and the six Anxious items loaded on a single Composed-Anxious factor. However, the fits were poor. Each bipolar POMS scale was then tested as a two factor model in which items from the two poles of the scale loaded on separate factors, for example the six Composed items loaded on one factor and the six Anxious items loaded on a second factor, the two factors being free to correlate. The fits were markedly better. The correlations between factors were low. Indeed, the 95% confidence intervals for each of these correlations included zero. Finally, each pole of the bipolar POMS scales was tested as a single factor model, for example

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the six Composed items loading on a single factor. The fits met the criteria adopted for this research for adequate fit for Composed, Elated, Depressed, and Tired, but fell slightly short for Anxious and Energetic and very short for Hostile. The PANAS scales were tested in the same manner. A bipolar single factor model produced a poor fit. A two factor model also produced a poor fit, and the correlation between factors was low. Separate single factor models produced an adequate fit for Positive Affect but a poor fit for Negative Affect.

Table 10.
Confirmatory Factor Analyses of Affect Items at Baseline

Items	Model	$\underline{N}$	χ^2	$\underline{df}$	p (χ^2)	RMSEA	p (RMSEA $\leq$ .05)	SRMR	CFI	Correlation between factors (with $\underline{SE}$)
POMS Composed and Anxious	Single factor	185	411.75	54	.00	.19	.00	.19	.55	-
POMS Elated and Depressed	Single factor	183	540.01	54	.00	.22	.00	.23	.56	-
POMS Energetic and Tired	Single factor	188	578.37	54	.00	.23	.00	.21	.61	-
POMS Composed and Anxious	Two factor	185	97.81	53	.00	.07	.08	.06	.94	-.15 (0.08)
POMS Elated and Depressed	Two factor	183	89.70	53	.00	.06	.18	.06	.97	-.04 (0.08)
POMS Energetic and Tired	Two factor	188	137.28	53	.00	.09	.00	.06	.94	.02 (0.08)
POMS Composed	Single factor	187	20.30	9	.02	.08	.12	.04	.97	-
POMS Anxious	Single factor	193	53.15	9	.00	.16	.00	.07	.91	-
POMS Elated	Single factor	189	20.28	9	.02	.08	.12	.03	.98	-
POMS Depressed	Single factor	188	28.47	9	.00	.11	.02	.05	.96	-
POMS Energetic	Single factor	192	58.45	9	.00	.17	.00	.04	.94	-
POMS Tired	Single factor	192	22.45	9	.01	.09	.08	.04	.97	-
POMS Hostile	Single factor	192	69.42	9	.00	.19	.00	.06	.90	-
PANAS Negative Affect and Positive Affect	Single factor	190	929.92	170	.00	.15	.00	.18	.60	
PANAS Negative Affect and Positive Affect	Two factor	190	470.45	169	.00	.10	.00	.09	.84	.00 (0.08)
PANAS Positive Affect	Single factor	192	85.02	35	.00	.09	.00	.04	.96	-
PANAS Negative Affect	Single factor	192	221.78	35	.00	.17	.00	.11	.71	-

Note. RMSEA = Root Mean Square Error of Approximation; SRMR = Standardised Root Mean Square Residual; CFI = Comparative Fit Index; POMS = Profile of Mood States; PANAS = Positive and Negative Affect Schedule.

In further confirmatory factor analyses all possible pairings of affect scales (i.e., the two PANAS scales and the seven unipolar POMS scales) were examined in two factor models. Notably, when the PANAS Positive Affect scale was paired with the POMS Energetic scale, the correlation between factors was .94 ($SE = 0.02$), and when the PANAS Negative Affect scale was paired with the POMS Anxious scale the correlation between factors was .92 ($SE = 0.03$). These high correlations suggested a lack of discriminant validity. When POMS positive affect scales were paired with each other (e.g., Elated with Energetic), and when POMS negative affect scales were paired with each other (e.g., Anxious with Tired), correlations between factors were high but not so high as to suggest lack of discriminant validity.

In short, the confirmatory factor analyses suggested that the affects were better represented by unipolar than by bipolar measures and by differentiated measures than by generalised measures. Therefore, for the subsequent structural equation modelling, it was decided to use the unipolar POMS scales. However, for information, the PANAS scales are included in Tables 11, 12, and 13.

Descriptive Statistics and Correlations for Baseline Variables

The descriptive statistics and intercorrelations for the GPQ scales are reported in Chapter Three. The descriptive statistics and correlations for the affects scales are detailed in Table 11. Listwise deletion for missing values reduced baseline N to 196. The means and standard deviations were lower and the skewnesses were higher for the negative affect measures than for the positive affect measures. Cronbach's alpha was adequate for all scales. The positive affect measures were highly intercorrelated (the highest being between PANAS Positive Affect and POMS Energetic), as were the negative affect measures (the highest being between PANAS Negative Affect and POMS Anxious). There was no significant correlation between any positive

affect measure and any negative affect measure. These correlations mirror the between-factor correlations in the confirmatory factor analyses reported above.

Table 11.

Descriptive Statistics and Intercorrelations of Affect Variables at Baseline.

| Variable | M | SD | Skewness | Cronbach's alpha | Correlations | | | | | | | |
					1	2	3	4	5	6	7	8
1. POMS Composed	2.39	.80	-0.04	.80	-							
2. POMS Elated	2.40	.98	0.30	.90	.71**	-						
3. POMS Energetic	3.09	1.03	-0.48	.93	.60**	.69**	-					
4. POMS Anxious	1.78	.74	1.10	.85	-.07	.11	.12	-				
5. POMS Depressed	1.51	.67	1.68	.85	-.02	-.03	-.04	.46**	-			
6. POMS Tired	1.71	.72	0.94	.84	-.05	.11	.02	.59**	.53**	-		
7. POMS Hostile	1.60	.73	1.81	.87	-.02	.04	.06	.48**	.82**	.57**	-	
8. PANAS Positive Affect	3.41	.91	-0.65	.93	.60**	.69**	.89**	.13	-.15*	.05	-.02	-
9. PANAS Negative Affect	1.49	.53	1.58	.83	-.08	.05	.08	.87**	.66**	.61**	.66**	.05

Note. $N = 196$. POMS = Profile of Mood States; PANAS = Positive and Negative Affect Schedule. Scale score computed as mean of nonmissing item scores. Minimum possible scale score 1, maximum 5.

*$p < .05$. ** $p < .01$.

Age, Gender, Response to Follow-Up, Response to Follow-up and Achievement of Goal by Follow-Up

Relationships of baseline affects with age, gender, response to follow-up, and achievement of goal by follow-up, are shown in Table 12, in the form of correlations. At the .01 level, age correlated positively with Depressed, and Hostile. Gender correlated negatively with Composed and Elated, meaning that females were lower than males on these scales. Response to follow-up did not correlate with any variable. Achievement of goal by follow-up correlated negatively with Origin, meaning that those who originated their goals were less likely to have achieved them by follow-up.

Table 12.

Relationships of Baseline Variables with Age, Gender, Response to Follow-Up, and Achievement of Baseline Goal at Follow-Up

	Correlations			
Baseline variable	With age ($\underline{N}$ = 191)	With gender[a] ($\underline{N}$ = 191)	With response to follow-up[b] ($\underline{N}$ = 196)	With achievement of baseline goal at follow-up[c] ($\underline{N}$ = 149)
POMS Composed	-.03	-.20**	.10	-.13
POMS Elated	.00	-.21**	.06	-.05
POMS Energetic	.14	-.17*	.05	-.07
POMS Anxious	.09	-.09	.05	.02
POMS Depressed	.24**	-.15*	-.07	.02
POMS Tired	.04	-.09	.09	.02
POMS Hostile	.24**	-.16*	.02	.05
PANAS Positive Affect	.01	-.12	.11	-.10
PANAS Negative Affect	.14	-.05	.04	.02

Note. GPQ = Goal Perceptions Questionnaire. POMS = Profile of Mood States. PANAS = Positive and Negative Affect Schedule.
[a]Positive correlation indicates females higher than males. [b]Positive correlation indicates responders higher than nonresponders. [c]Positive correlation indicates achievers higher than nonachievers.
*p < .05. ** p < .01.

Correlations Between Goal Perceptions and Affects

The correlations between goal perceptions and affects at both baseline and follow-up are shown in shown in Table 13. Particular goal perceptions and particular affects were significantly correlated (.01 level) at both baseline *and* follow-up. Composed correlated positively with Enjoyment and Progress. Elated correlated positively with Commitment, Enjoyment, Origin, Progress, and Value. Energetic correlated positively with Ability, Commitment, Control, Enjoyment, Progress, Success Expectation, Support, and Value. Anxious correlated positively with Competition, Difficulty, and Effort, and negatively with Ability, Control, and Success Expectation. Depressed correlated positively with Competition and Conflict, and negatively with Ability, Control, Importance to Others, Measurability, Progress, Success Expectation, Support, and Tools. Tired correlated negatively with Control and Importance to Others. Hostile correlated positively with Competition and Conflict, and negatively with Control, Importance to Others, Measurability, Progress, Success Expectation, Support, and Time. Positive Affect correlated positively with Ability, Commitment, Complexity, Control, Enjoyment, Options, Origin, Progress, Success Expectation, Support, and Value, and negatively with Conflict. Negative Affect correlated positively with Competition, and negatively with Ability, Control, Importance to Others, Measurability, Progress, Success Expectation, and Support

Table 13.
Correlations at Baseline and at Follow-Up Between Goal Perceptions and Affects

GPQ scale	Baseline (N = 196)									Follow-Up (N = 154)								
	POMS Composed	POMS Elated	POMS Energetic	POMS Anxious	POMS Depressed	POMS Tired	POMS Hostile	PANAS Positive Affect	PANAS Negative Affect	POMS Composed	POMS Elated	POMS Energetic	POMS Anxious	POMS Depressed	POMS Tired	POMS Hostile	PANAS Positive Affect	PANAS Negative Affect
Ability	.16*	.13	.26**	-.25**	-.19**	-.16*	-.17*	.25**	-.25**	.11	.17*	.31**	-.21**	-.22**	-.24**	-.05	.37**	-.24**
Commitment	.22**	.27**	.37**	.00	-.14*	.06	-.05	.46**	-.03	.09	.21**	.39**	.06	-.16	-.18*	-.08	.51**	-.04
Competition	.06	.17*	.19**	.35**	.22**	.22**	.25**	.21**	.34**	-.01	.06	.02	.31**	.26**	.16	.26**	-.02	.31**
Complexity	-.14*	-.03	.13	.10	-.06	.20**	.08	.21**	.01	-.05	-.01	.23**	.11	-.06	.12	-.09	.28**	.01
Conflict	-.12	-.12	-.22**	.07	.20**	.07	.20**	-.23**	.10	-.06	-.07	-.17*	.25**	.36**	.33**	.40**	-.23**	.28**
Control	.15*	.16*	.33**	-.20**	-.42**	-.26**	-.35**	.40**	-.33**	.13	.20**	.33**	-.25**	-.39**	-.22**	-.43**	.37**	-.34**
Difficulty	-.09	.06	.17*	.21**	.05	.23**	.12	-.22**	.15*	-.14	-.12	.06	.27**	.11	.18*	.08	.12	.19*
Divisibility	.07	.07	.11	-.09	-.16*	-.03	-.11	.16*	-.16*	-.03	-.04	.09	-.28**	-.26**	-.10	-.23**	.11	-.26**
Effort	-.05	.11	.23**	.29**	.10	.32**	.17*	.29**	.28**	-.14	-.05	.12	.23**	.09	.16*	.02	.16*	.16
Enjoyment	.40**	.51**	.65**	-.01	-.14*	-.03	-.09	.69**	-.05	.36**	.46**	.58**	-.19*	-.40**	-.22**	-.34**	.65**	-.29**
Feedback	.05	.03	.10	-.09	-.33**	-.14*	-.27**	.18*	-.22**	.00	.04	.11	-.02	-.15	-.05	-.15	.19*	-.04
Fixedness	.18*	.15*	.10	-.06	.02	-.03	-.01	.11	-.03	.13	.25	.16	-.09	-.20*	-.15	-.16	.16*	-.12
Importance to Others	-.14*	-.19**	.03	-.14	-.32**	-.22**	-.24**	.09	-.19**	-.04	-.02	.22**	-.16*	-.38**	-.23**	-.28**	.25**	-.28**
Measurability	.01	.07	.15*	-.17*	-.30**	-.10	-.23**	.18*	-.29**	.05	.08	.21*	-.27**	-.34**	-.22**	-.32**	.21**	-.31**
Options	.19**	.28**	.24**	.08	-.05	.09	.00	.25**	.06	.12	.20*	.18*	.02	-.06	-.03	-.10	.26**	.04
Origin	.26**	.39**	.30**	.06	-.01	.04	-.01	.32**	.08	.20*	.26**	.19*	.02	-.04	-.05	-.07	.25**	.01
Progress	.25**	.25**	.25**	-.13	-.37**	-.12	-.25**	.32**	-.28**	.22**	.25**	.28**	-.25**	-.34**	-.16	-.31**	.33**	-.34**
Publicness	.07	.02	.06	.05	.11	.14*	.10	.12	.09	.04	.07	.12	.01	-.02	.06	-.02	.17*	-.01
Specificity	-.01	-.01	.16*	.01	-.08	-.01	-.10	.21**	.01	-.13	-.07	.07	-.01	-.16*	-.24**	-.12	.15	-.07
Success Expectation	.12	.15*	.19**	-.19**	-.46**	-.18*	-.41**	.30**	-.28**	.12	.14	.25**	-.26**	-.39**	-.27**	-.34**	.33**	-.32**
Support	.10	.12	.24**	-.10	-.40**	-.11	-.31**	.33**	-.24**	.16	.17*	.30**	-.19**	-.43**	-.23**	-.38**	.38**	-.28**
Teamwork	.05	-.01	.10	.07	.17*	.16*	.19**	.12	.06	.04	.08	.25**	-.07	-.02	.04	.08	.26**	-.10
Time	.19**	.14	.09	.04	-.22**	-.18*	-.29**	.11	-.05	.14	.09	.07	-.10	-.16*	-.23**	-.24**	.13	-.11
Tools	.01	-.02	.08	-.14*	-.26**	-.16*	-.28**	.10	-.15*	.13	.10	.15	-.19*	-.24**	-.23**	-.19*	.21**	-.18*
Value	.36**	.48**	.50**	.11	-.02	.12	.02	.61**	.13	.20*	.34**	.48**	.12	-.14	-.11	-.06	.60**	.02

Note. GPQ = Goal Perceptions Questionnaire. POMS = Profile of Mood States. PANAS = Positive and Negative Affect Schedule. *p < .05. **p < .01.

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Structural Equation Modelling

Structural equation modelling was conducted using scale scores (rather than item scores) as observed variables. The full model is shown in Figure 2. It was divided into two submodels. This sequential approach was adopted with a view to examining diagnostic information and making modifications in the submodels prior to combining them in the full model. The first submodel comprised Success Expectation and Value and their antecedents but not their consequences.

Figure 2. Model of the antecedents of commitment and affect.
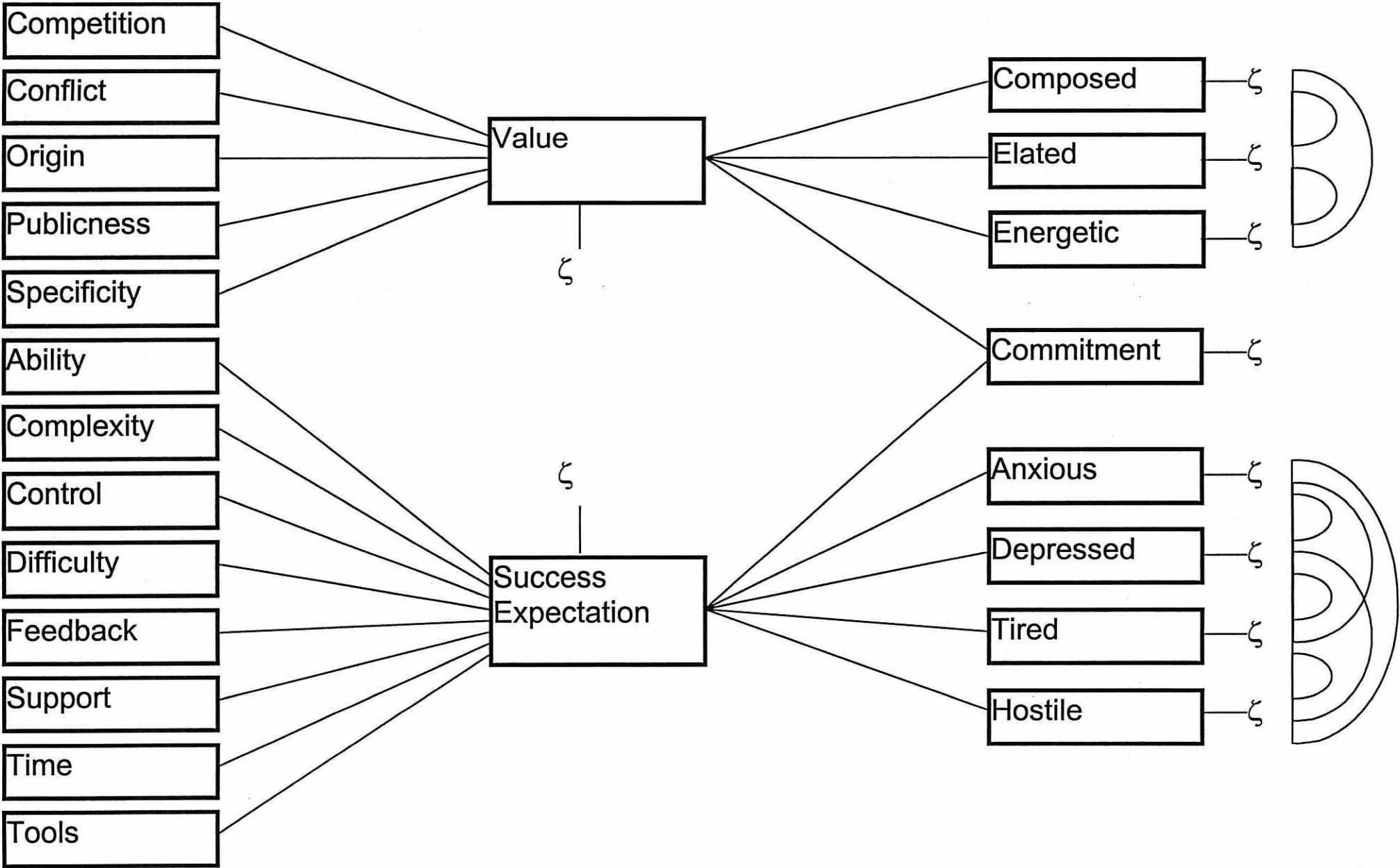
The fit for this model was $\chi^2(14, N = 196) = 33.32, p (\chi^2) = .00$, RMSEA = .09, p (RMSEA $\leq$ .05) = .05, SRMR = 0.04, CFI = .98, an acceptable fit by the criteria adopted for this research. There was a large modification index for the path from Complexity to Value. (Large in this research refers to a value that is greater than or equal to 6.63, the critical value of χ^2 with 1 degree of freedom at the .01 level.). The expected change suggested that the more individuals perceived their goals to be complex, the more they valued them. It seemed plausible that more complex goals might be seen as more worthwhile (e.g., Matsui, Okada, & Mizuguchi, 1981). Therefore, the modification was made. The fit was then $\chi^2(13, N = 196) = 22.62, p = 0.05$, RMSEA = 0.06, p (RMSEA $\leq$ .05) = .27, SRMR = 0.03, CFI = .99, a good fit in every respect.

The second submodel comprised Value and Success Expectation and their consequences (Commitment and affects) but not their antecedents. The disturbance terms for the three positive affect scales were allowed to correlate, as were the disturbance terms for the four negative affect scales. This was to allow for the close relationships between affects apparent in the confirmatory factor analyses. The fit for this model was $\chi^2 = 58.72$ (26, $N = 196$), $p = .00$; RMSEA = 0.08, p (RMSEA $\leq$ .05) = .04; SRMR = 0.07, CFI = .97, an acceptable fit by the criteria adopted in this study. There were two large modification indices. These were independent of each other, in that making either modification had no effect on the other modification index. One of these indices was for the path from Anxious to Composed, the valence of the expected change suggesting that as individuals felt more anxious about their goals they felt less composed about them. This would be an exception to the general finding of independence of positive and negative affects, but it seemed entirely plausible, so the modification was made. The other large modification index was for the path from Hostility to Commitment, the valence of the expected change suggesting that as individuals felt more hostile about their

goals they felt more committed to them. It was decided to also make this modification, on the grounds that feeling hostile ("angry", "annoyed", "bad tempered", "furious", "grouchy", "hostile") about a goal might engender increased commitment to the goal (in a way that feeling anxious, depressed or tired would not). In achievement situations, anger typically involves attributing blame to others (Weiner, 1985), which could be motivating. With these two modifications, the fit was $\chi^2(24, N = 196) = 35.80, p = .06$; RMSEA = 0.05, p (RMSEA $\leq .05$) = .46; SRMR = 0.07, CFI = .99, a good fit in every respect.

For the full model without any modifications (Figure **), the fit was $\chi^2(144, N = 196) = 328.58, p = .00$, RMSEA = 0.08, p (RMSEA $\leq .05$) = .00, SRMR = .08, CFI = .90, an inadequate fit by the criteria adopted for this research. Modification indices indicated that the modifications made to the two submodels were still warranted. With these modifications made the fit was $\chi^2(141, N = 196) = 292.42, p = .00$, RMSEA = 0.08, p (RMSEA $\leq .05$) = .00, SRMR = .08, CFI = .92, still inadequate by the criteria adopted for this research. There were particularly large (> 13) modification indices for the paths from Depressed, Tired, and Hostile to Success Expectation. The valences of the expected changes were positive. To make any such modification would be to introduce a nonrecursive relationship (Success Expectation influencing and being influenced by a negative affect). Such a nonrecursive relationship based on cross-sectional data would be very difficult to interpret. There were other reasons for being hesitant about making such a modification. The three modification indices were not independent, in that making any one of the modifications substantially reduced the other modification indices. There was no suggestion from the residuals that the model under- or over-estimated any of the three relationships in question. Therefore it was decided not to make any such modification.

Attention was turned to possible direct effects (not mediated by Value or Success Expectation) of goal perceptions upon Commitment and affects. There were some large modification indices for such possible direct effects. Some modifications were made, in the following order. Specificity was allowed to directly influence Commitment, positively. Specificity has been recognised as a core goal attribute leading to better task performance (Locke & Latham, 1990). Competition was allowed to influence Anxiety, positively. Competition with others has been recognised as a workplace stressor (e.g., Spielberger & Reiser, 1996). Support was allowed to influence Depression, negatively. Social support has been recognised as contributing to (low) depression (e.g., Cohen & Wills, 1985). Control was allowed to influence Energetic, positively. Perceived control has been recognised as an important determinant of workplace well-being (Sauter, Hurrell, & Cooper, 1989). With these modifications made, the fit was $\chi^2(137, N = 196) = 238.98$, $p = .00$, RMSEA = 0.06, p (RMSEA $\leq$ .05) = .00, SRMR = .07, CFI = .95, adequate by the criteria.

The parameter estimates for the modified full model are shown in Table 14. The determinants of Value (i.e., paths where the 95% confidence interval excluded zero) were high Complexity, low Conflict, high internal Origin, high Publicness and high Specificity. The strongest influence was Origin (standardised estimate .39). The determinants of Success Expectation were high Ability, Control, and Time. The strongest influence was Control (standardised value .34). Value and Success Expectation both influenced Commitment positively. Value influenced all positive affects positively. Success expectation influenced all negative affects negatively. In addition, Specificity positively influenced Commitment, Control positively influenced Energetic, Competition positively influenced Anxiety, and Support negatively influenced Depression. Finally, Anxiety negatively influenced Composure and Hostility positively influenced Commitment.

Table 14.
Path Estimates for Final Structural Equation Model

Path	Unstandardised estimate	SE of unstandardised estimate	95% confidence interval	t value	Standardised estimate
From goal perceptions to Value					
Competition to Value	0.03	0.04	-0.04 to 0.11	0.89	.05
Complexity to Value	*0.17*	*0.05*	*0.08 to 0.27**	*3.61*	*.21*
Conflict to Value	-0.23	0.07	-0.36 to -0.10*	-3.51	-.23
Origin to Value	0.24	0.04	0.17 to 0.31*	6.32	.39
Publicness to Value	0.12	0.04	0.04 to 0.20*	2.92	.17
Specificity to Value	0.23	0.06	0.10 to 0.35*	3.62	.24
From goal perceptions to Success Expectation					
Ability to Success Expectation	0.26	0.07	0.12 to 0.41*	3.56	.22
Complexity to Success Expectation	-0.02	0.08	-0.18 to 0.13	-0.31	-.02
Control to Success Expectation	0.35	0.07	0.22 to 0.48*	5.25	.34
Difficulty to Success Expectation	-0.02	0.07	-0.15 to 0.11	-0.30	-.02
Feedback to Success Expectation	0.10	0.06	-0.02 to 0.23	1.63	.11
Support to Success Expectation	0.10	0.08	-0.06 to 0.25	1.23	.09
Time to Success Expectation	0.22	0.06	0.10 to 0.33*	3.56	.23
Tools to Success Expectation	0.07	0.07	-0.06 to 0.20	1.01	.06
From Value to Commitment and affects					
Value to Commitment	0.42	0.04	0.33 to 0.50*	9.87	.46
Value to Composed	0.42	0.08	0.27 to 0.57*	5.43	.37
Value to Elated	0.65	0.09	0.48 to 0.83*	7.32	.48
Value to Energetic	0.63	0.09	0.45 to 0.81*	6.83	.44
From Success Expectation to Commitment and affects					
Success Expectation to Commitment	0.42	0.04	0.34 to 0.49*	11.03	.53
Success Expectation to Anxious	-0.15	0.06	-0.27 to -0.02*	-2.33	-.17
Success Expectation to Depressed	-0.33	0.05	-0.44 to -0.23*	-6.31	-.42
Success Expectation to Tired	-0.16	0.06	-0.28 to -0.03*	-2.44	-.18
Success Expectation to Hostile	-0.36	0.06	-0.48 to -0.24*	-6.02	-.41

From goal perceptions to Commitment and affects
(not via Value and Success Expectation)

Path	Unstandardised estimate	SE of unstandardised estimate	95% confidence interval	t value	Standardised estimate
Specificity to Commitment	*0.16*	*0.04*	*0.08 to 0.23**	*3.89*	*.18*
Control to Energetic	*0.24*	*0.06*	*0.12 to 0.36**	*3.82*	*.19*
Competition to Anxious	*0.14*	*0.04*	*0.06 to 0.21**	*3.68*	*.21*
Support to Depressed	*-0.12*	*0.04*	*-0.20 to -0.05**	*-3.26*	*-.14*
Other					
Anxious to Composed	*-0.19*	*0.05*	*-0.29 to -0.08**	*-3.44*	*-.17*
Hostile to Commitment	*0.15*	*0.04*	*0.07 to 0.23**	*3.74*	*.17*

Note. Modifications to the original model are shown in italics.

*95% confidence interval excludes 0.

The parameter estimates for the unmodified full model (outlined in Figure 2) were then compared with the corresponding parameter estimates for the modified model (detailed in Table 14). This was to check whether adding new (not originally hypothesised) paths had substantially affected the parameter estimates for old (originally hypothesised) paths. It was found that the new paths had made little or no difference to the parameter estimates for the old paths. If the 95% confidence interval excluded zero in the unmodified model, it did so in the modified model; and if the 95% confidence interval included zero in the unmodified model, it did so in the modified model.

Panel Analysis

The panel analyses were limited to individuals who were at follow-up still working towards the same goal as at baseline ($N = 106$ by listwise deletion for missing values). The purpose of these analyses was to ascertain whether, in addition to or instead of immediate effects of Value and Success Expectation upon commitment and affects, there were any lagged effects. A series of small models was tested, since one large model would have been unmanageable. To illustrate, the effects of Value on Composed were tested by constructing a model containing baseline and follow-up Value and Composed. Baseline Value was allowed to influence baseline Composed, and follow-up Value to influence follow-up Composed. In addition, baseline Value was allowed to influence follow-up Value, and baseline Composed to influence follow-up Composed. This model fitted well and all allowed paths had 95% confidence intervals that excluded zero. Crucially, the modification index for the path from baseline Value to follow-up Composed was small (less than 3.84, the value of χ^2 with 1 degree of freedom at the .05 level). Thus, there was clear evidence of an immediate effect of Value on Composed, but no evidence of a lagged effect. The models tested are listed in Table 15. In no instance was there evidence of a lagged effect.

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Table 15.
Fit Statistics for the Panel Models

Model	χ^2	df	p (χ^2)	RMSEA	p (RMSEA $\leq$ .05)	SRMR	CFI
Value influencing Composed	1.09	2	.58	.00	.66	.02	1.00
Value influencing Elated	1.89	2	.39	.00	.48	.02	1.00
Value influencing Energetic	5.32	2	.07	.12	.12	.05	0.98
Success Expectation influencing Anxious	0.66	2	.72	.00	.78	.02	1.00
Success Expectation influencing Depressed	0.16	2	.92	.00	.94	.01	1.00
Success Expectation influencing Tired	0.23	2	.89	.00	.92	.01	1.00
Success Expectation influencing Hostile	2.29	2	.32	.04	.41	.04	1.00
Value and Success Expectation both influencing Commitment	12.96	7	.07	.09	.17	.04	0.99

Note. N=106 by listwise deletion for missing values. RMSEA = Root Mean Square Error of Approximation; SRMR = Standardised Root Mean Square Residual; CFI = Comparative Fit Index.

Discussion

The model tested was derived from Hollenbeck & Klein's (1987) value-expectancy model of commitment, incorporating Emmons' (1986, 1989) proposal that value influences positive affects whilst success expectation influences negative affects. On the whole, the results of the structural equation modelling were consistent with the model. The main findings can be summarised in relation to the six hypotheses. Hypothesis 1 was that goal value and goal success expectation would both positively influence goal commitment. This is what was found. Hypotheses 2 was that value would positively influence positive affects, and Hypothesis 3 that success expectation would negatively influence negative affects. This is what was found. Hypothesis 4 was that value would be influenced by competition (negatively), conflict (negatively), control, internal origin, publicness, and specificity. It was found that value was indeed influenced by conflict, origin, publicness, and specificity, but not by competition, and that it was also influenced by complexity (positively). Hypothesis 5 was that success expectation would be influenced by ability, complexity (negatively), control, difficulty (negatively), feedback, support, time, and tools. It was found that success expectation was indeed influenced by ability, control, and time, but not the others. Hypothesis 6 was that the determinants of value and success expectation would not have direct effects upon commitment, positive affect or negative affect. This is generally what was found, but there were direct effects of specificity upon commitment, control upon energetic, competition upon anxious, and support upon depressed. Furthermore, allowance was made for influences of hostility on commitment, and anxiety upon composure. Additionally, the longitudinal (panel) analyses suggested that there was no lag in the effects of value and success expectation on commitment and affects.

Prior to conducting the structural equation modelling, it was necessary to examine the structure of affect. The confirmatory factor analyses suggested that the affects were better represented by unipolar than by bipolar measures. In two factor models, the correlations between positive and negative affects were strikingly low. This is not so surprising in the case of the PANAS, the development of which was guided by a theory of independence of positive and negative affect (see Russell & Carroll, 1999a). It is more surprising in the case of POMS, the development of which was guided by a theory of bipolarity. There has been a great deal of debate recently on the structure of affect (see Cacioppo, Gardner, & Bernston, 1999; Diener, 1999; Green et al., 1999; Russell and Carroll, 1999a, b; Russell & Feldman Barrett, 1999; Watson, Wiese, Vaidya, & Tellegen, 1999; Watson & Tellegen, 1999). There is some consensus that bipolarity is to be expected during an intense emotional episode (Diener, 1999). Independence is more likely when emotional reactions are less intense. Moreover, independence is more likely when emotional reactions involve an evaluative component (Cacioppo et al.; Russell & Carroll, 1999a; Russell & Feldman Barrett). In this regard, Russell and Feldman Barrett distinguish between an *affectively charged evaluative reaction* (how one feels about something) and *core affect* (how one feels). Independence is also more likely when there is aggregation across episodes (Russell & Carroll, 1999a). In the present study, the way in which affects were measured ("how does your goal make you feel") invited the individual to evaluate and allowed the individual to generalise across time. Therefore, some independence of positive and negative affects was to be expected.

However, Green et al. (1999) elaborate on numerous measurement problems that can lead to apparent independence when there is actual bipolarity. These problems include, of course, random and nonrandom measurement error. However, they also include artefacts arising from

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differing distributions. In the data the variances were somewhat higher for positive affects than for negative affects, a common finding (Green et al.). This could distort the observed correlations of positive and negative affects not only with each other but also with other variables, which might threaten the validity of some of the key findings. However, the key findings are based on structural equation modelling, in which the parameter estimates are regression slopes not correlations, thereby circumventing the specific artefact arising from differing variances. There might be artefacts arising from other distributional differences (e.g., skewness). However, visual examination of the distributions of all variables did not reveal any worrying pattern. Moreover, certain key findings are simply not consistent with a pervasive artefact. For example, value related to positive affects whereas success expectation related to negative affects, but *both* value and success expectation related to commitment.

The confirmatory factor analyses also suggested that the affects were better represented by differentiated than by generalised measures. Unipolar POMS scales were therefore used, even though there were fairly strong associations between positive affects (Composed, Elated, and Energetic) and between the negative affects (Anxious, Depressed, Tired, and Hostile). In the structural equation model, value influenced all positive affects and success expectation influenced all negative affects. However, the use of differentiated measures was to some extent vindicated by the more specific effects of control on energetic, competition on anxious, support on depressed, and hostility on commitment.

There were some, but not many, gender and age differences in goal perceptions and affects. At the .01 level, females were lower than males on some positive affects, but were not different on goal perceptions. At

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the .01 level, age was positively associated with some negative affects, and also with the teamwork, but teamwork was not a variable in the structural equation modelling.

In their recent meta-analysis (not available when this study was designed), Klein et al. (1999) examined putative determinants of goal commitment, both proximal and distal. They found that expectancy and attractiveness of goal attainment were related to goal commitment. They also found that "higher levels of commitment resulted from having high ability, a voice in the determination of the goal, task or job satisfaction, specific goals, task experience, receiving feedback on one's performance, and the form of that feedback" (p.890). Klein et al. state that they were unable in their meta-analysis to test whether expectancy and attractiveness played a mediating role. To this one might add that they tested only univariate and not multivariate effects upon commitment. Klein et al. further note that some putative distal determinants of commitment "have been infrequently examined (e.g., goal conflict, performance constraints) or not examined at all (e.g., authority, competition)" (p. 893). The findings of this study are consistent with some of Klein et al.'s conclusions, but more importantly, the design of this study seems to meet many of Klein et al.'s concerns.

This study goes further in that it examines the effects of goal perceptions on commitment and affects simultaneously. Critically, the proximal and distal determinants of positive and negative affects are different. Either value or success expectation can enhance commitment, but it is value that determines positive affect, and success expectation negative affect. Moreover, the determinants of value and success expectation are different. As noted in the introduction, in an ideal world, one would wish to maximise goal commitment whilst also maximising positive affect and minimising negative affect. To achieve this would require attention to a

range of variables. Prominent among these would be origin (major determinant of value) and control (major determinant of success expectation).

According to Deci and Ryan's (1985, 1990) self-determination theory, optimal motivation for a behaviour is evidenced when individuals feel self-determining (that they are the origin of the behaviour) and competent (that they have control over the behaviour). A lack of perceived self-determination is experienced as pressure to engage in the behaviour and is accompanied by a negative emotional tone (Deci & Ryan, 1985, 1990). Therefore, motivation to strive to achieve a goal and positive affective responses to the goal will be greater when the individual feels that they have chosen the goal themselves and that they are competent to pursue it. Whilst it may rarely be possible for individuals to truly be free agents in the selection and pursuit of work-related goals, self-determination theory describes processes by which externally imposed constraints on behaviour (such as an assigned goal) can become internalised and experienced as more self-determined, thereby avoiding a negative affective response and a sense of tension and conflict. Specifically, Deci, Eghrari, Patrick, and Leone (1994) showed that internalisation of an inherently uninteresting but important activity can be facilitated by providing a meaningful rationale for the behaviour, by acknowledging the person's feelings with respect to the behaviour and by presenting this rationale and acknowledgement in a noncontrolling fashion that minimises pressure and conveys choice.

In conclusion the aim of this research, to clarify how individuals' perceptions of their goals determine their commitment to and feelings about those goals, has been met. The findings have direct relevance to goal-setting programmes. In such programmes there need be no trade-off between commitment and affective well-being. On the contrary, through

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judicious goal-setting, it should be possible to enhance both commitment and well-being. This will require attention to origin and control and the other perceptions identified in this research. Equally, if an individual presents as uncommitted or unhappy about a goal, it should be possible to trace this back to lack of value or lack of success expectation or both and in turn to the more distal determinants identified in this research. Corrective action could then be taken.

CHAPTER 5
Intervention Study

Abstract

The aim was to explore the effects of an interview based on the principles of Motivational Interviewing on individuals' goal perceptions, goal achievement, performance, and motivation. Members of a class that took a compulsory Research Methods module as part of their degree were approached. Participants ($N = 58$) completed an abbreviated version of the Goal Perceptions Questionnaire (GPQ) and an amended version of the Academic Motivation Scale (AMS). Participants were asked to predicted their score and set a goal for the module. Participants were randomly assigned to either a control or treatment group. Those assigned to the treatment group took part in an interview based on the principles of Motivational Interviewing, whilst the control group went through a process of action planning. Approximately a week after the interviews, participants were asked to fill in the GPQ and AMS questionnaires again. There was no significant change (increase or decrease) in the GPQ or AMS scores dependent on what group participants were assigned to. Participant's goals and predicted scores were compared with their end of module examination marks. There was no significant difference in the number who achieved (or did not achieve) their predicted score or goal dependent on what group (treatment or control) they were assigned to. This study provided evidence of a link between goal perceptions and goal achievement and performance.

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Introduction

One of the aims of the previous research detailed in this thesis was to examine how individuals' perceptions of their work related goals determined their commitment to their goals. Knowing which perceptions affect goal commitment is useful information (e.g., for producing guidelines for the design of effective goal setting programmes). However, it is important to explore whether and/or how key goal perceptions can be changed in order to design interventions for existing goal setting programmes. Thus, the aim of this study is to explore the effects of an interview based on the principles of Motivational Interviewing (e.g., Rollnick, Mason, & Butler, 1999) on individuals' goal perceptions, goal achievement, performance, and motivation.

Individuals often have to perform tasks (or work towards goals) that they do not particularly want to and that given the choice they would not choose. This is often true in an educational setting. For example, the majority of university students are required to take compulsory modules as part of their degree course. Given the choice they may not have chosen to study these compulsory modules. However, these modules may represent an important learning episode that is an essential element of the knowledge base that the individual requires.

Whilst it may rarely be possible for individuals to truly be free agents in the selection of all their tasks, self-determination theory describes a process by which externally imposed constraints on behaviour can become internalised and experienced as more self-determined. According to Deci and Ryan (1990), the more integrated and autonomous an individual's motives are the more positive are the outcomes and attitudes associated with it. Through a process of internalisation, individuals come to accept values and regulatory processes that are endorsed by the social order but are not intrinsically appealing (Deci & Ryan, 1990). Even if initial behaviours are extrinsically motivated, if behaviours are presented as

a choice, accepted, and held to be valuable, there is more chance that individuals will perceive themselves as self-determined. Deci, Eghrari, Patrick, and Leone (1994) showed that internalisation of an inherently uninteresting but important activity can be facilitated by providing a meaningful rationale for the behaviour, by acknowledging the person's feelings with respect to the behaviour and by presenting this rationale and acknowledgement in a noncontrolling fashion that minimises pressure and conveys choice.

The process of internalisation is similar to the principles behind Motivational Interviewing (e.g. Rollnick, Mason, & Butler, 1999). Motivational Interviewing is a directive but client-centred form of counselling that helps clients explore and resolve ambivalence (Rollnick & Miller, 1995). It has been used to change behaviours such as smoking, drug taking etc. (Miller & Rollnick, 1991; Rollnick et al., 1999). The process explores an individual's motivation towards the task, acknowledges the individual's frame of reference, and provides help in identifying a choice of strategies for achievement of that task. The success of this process depends on how the counsellor interacts with the individual and the techniques adopted by the counsellor. The counselling elements include the provision of feedback, an emphasis on individual responsibility, the provision of expert advice on alternative strategies for changing behaviour, the expression of empathy, and the reinforcement of individuals' self-efficacy. The Motivational Interviewing process includes the exploration of the attitude of the individual and the development of a discrepancy between present behaviour and broader goals. A discrepancy is created by encouraging the individual to explore the pros and cons of changing behaviour. One of the last features of the Motivational Interviewing process is the design of an action plan that identifies the strategies for changing behaviour, importantly offering a choice to the individual on how change can be achieved.

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The research into Motivational Interviewing has not always been wholly supportive of the technique. However, this is often attributed to the nature of the treatment used with the control group (Baker, Kochan, Dixon, Heather, & Wodak, 1994). Although it is necessary to ensure that the groups have the same experimenter, and the amount of time spent with the experimenter is equitable, it is also suggested (Perkins & Epstein, 1988) that treatment and control procedures should also have equivalent credibility with participants.

The two main features of the Motivational Interviewing process are the exploration of the importance of the behaviour and the building of confidence or self-efficacy (Rollnick et al., 1999). According to Rollnick et al. "if a change feels important to you, and you have the confidence to achieve it, you will feel more ready to have a go" (p. 18). These two main features of the Motivational Interviewing process match the key determinants of goal commitment identified in this research (see Chapter Four), which are value and success expectation (insofar as success expectation and self-efficacy are equated, e.g., Kirsch, 1985; 1986, see Chapter Two). Thus, if you feel your goal is important to you and you feel able, then you will be committed to achieve it. Therefore, the main aim of this study is to examine the effects of a process based on the principles of Motivational Interviewing on these perceptions. In addition to examining the effects on commitment, value, and success expectation, this research takes the opportunity to explore further distal determinants of key goal perceptions. In the last study (Chapter Four), origin and control perceptions were highlighted as important variables in enhancing value and success expectation and hence commitment. In this study individuals will be requested to set their own goals; thus goal origin should not be a variable. However, in an attempt to further explore the antecedents of success expectation, a perception of control is included. Additionally included are the dimensions of ability and support as these two dimensions were consistently related to high control perceptions, whilst ability was also

related to high success expectations. Thus, six dimensions are selected for measurement in this study: commitment, success expectation, value, control, ability, and support.

In addition to exploring the effects of a process based on the principles of Motivational Interviewing on goal perceptions, it is proposed to examine whether these interviews also affect motivation. According to Deci and Ryan (1985), one of the most important psychological concepts in education is motivation. Motivation is related to curiosity, persistence, learning, and performance (Deci & Ryan, 1985).

Vallerand, Pelletier, Blais, Brière, Senécal, and Vallières' (1992) Academic Motivation Scale (AMS) measures several types of motivation that allows a finer analysis of the motivation forces in education. Intrinsic and extrinsic motivations are each divided into a tripartite. Three scales measure intrinsic motivation: To Know, To Accomplish, and To Experience Stimulation. Three scales measure Extrinsic Motivation: Identified, Introjected, and External Regulation. Research reported by Deci, Vallerand, Pelletier, and Ryan (1991) found that students who had more self-determined forms of motivation for doing schoolwork were more likely to stay in school, to achieve, and to be well adjusted than students who had less self-determined motivation. An individual's motivation towards the task may affect the way in which they approach their learning. Fazey (1999), who amended Vallerand et al.'s (1992) AMS to reflect the UK university system, found that students' reasons for studying were related to their approach to learning (deep and surface). For example, a student who took a deep approach (who's intention was to understand) was more likely to score highly on the intrinsic scales. Those who took a surface approach (whose intention was to learn only enough to pass their degree) tended to score higher on the Amotivation scale.

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To iterate, the aim of this study was to explore the effects of an interview based on the principles of Motivational Interviewing (e.g., Rollnick et al., 1999) on individuals' goal perceptions, goal achievement, performance, and motivation. Specifically it is proposed that the scores on the goal perceptions and intrinsic scale scores will improve (get higher) for those involved in the interviews (based on the principles of Motivational Interviewing) compared to those who are not involved in such interviews. Those involved in the interviews (based on the principles of Motivational Interviewing) are more likely to achieve their goal and predicted score (participant's predicted score on end of module exam) than those who are not involved in such interviews. It is proposed that the goal perceptions scales and motivational scales will be related to goal achievement. For example, those who score higher in commitment or success expectation (regardless of the intervention) should be more likely to achieve their goal. Individuals who report more intrinsic reasons for being at university may be more likely to achieve their goal and their predicted score, and their reasons for being a university may be related to overall performance on end of module examination.

Methodology

Participants

Undergraduate students taking Research Methods as part of their single or joint honours degree within the School of Sport, Health, and Exercise Sciences (SSHES) were approached. A total of 97 students provided initial data, specifically a predicted score for the module. Of these 97, 62 agreed to participate in the interviews. Of the 62 participants, 1 left the course, 1 failed to return their posttest questionnaire and 2 did not take the end of module examination. This left 58 participants comprising 25 females and 33 males. Participants' ages ranged from 19 to 33 with a mean of 20.31 (SD = 2.39). Students within SHES are required to act as participants for

experimental studies as part of their degree course; those (58) students who took part in the interviews received credit for their participation.

Measures

Participants' end of module examination results for Research Methods were used as a measure of performance. From the previous research detailed in the thesis (see Chapter Three), the items to measure the dimensions of ability, commitment, control, success expectation, support, and value were taken from the Goal Perceptions Questionnaire (GPQ) to form an abbreviated version of the GPQ for this study (see Appendix F). Participants were requested to rate their goal on each of the GPQ items, using a five point scale of *strongly disagree, disagree, neither agree nor disagree, agree,* and *strongly agree.*

Participants were asked to complete an amended version of Vallerand et al.'s (1992) AMS (see Appendix L). The language used in this version of the inventory was amended by Fazey (1999) to more accurately reflect the higher education system in the United Kingdom. The AMS measures student's motivation for studying in higher education and as such is a contextual rather than situational measure of motivation. Intrinsic and extrinsic motivations are each divided into a tripartite. Three scales measure intrinsic motivation: Intrinsic Motivation – To Know; Intrinsic Motivation – To Accomplish; and Intrinsic Motivation – To Experience Stimulation. Three scales measure extrinsic motivation: Extrinsic Motivation – Identified; Extrinsic Motivation – Introjected; and Extrinsic Motivation – External Regulation. The first intrinsic motivation scale, To Know, measures the extent to which an individual performs an activity for the pleasure and satisfaction that is experienced whilst learning, exploring, or trying to understand something new. The second scale, To Accomplish, measures the extent to which an individual performs an activity for the pleasure and satisfaction experienced when attempting

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to accomplish or create something. The third intrinsic motivation scale, To Experience stimulation, measures the extent to which individuals perform an activity in order to experience stimulation sensations (sensory pleasure, aesthetic experiences, as well as fun and excitement) similar to Csikszentmihalyi's (1990) "flow".

The first extrinsic motivation scale, Identified, measures the extent to which an activity is personally valued or important to the individual. The second extrinsic scale, Introjected, measures the extent to which activities are performed to avoid guilt or to attain ego enhancements such as pride or self-worth. The third extrinsic scale, External Regulation, measures the extent to which an activity is performed to gain rewards or because of externally imposed constraints.

In addition to the intrinsic and extrinsic scales, there is a seventh scale, Amotivation. This scale measures the extent to which individuals are nonmotivated or lack motivation; being neither intrinsically or extrinsically motivated. Participants were asked to rate their reasons for attending university on a seven point scale with five written anchors: *does not correspond, corresponds a little, corresponds moderately, corresponds a lot, corresponds exactly.*

Procedure

For this study, ethical approval was obtained from the ethics committee of SSHES. The compulsory module chosen for this study is Research Methods. Research Methods is an integral, essential, and compulsory module for all second year students taking a full or joint honours degree within SSHES. This module involves the analysis of experimental, quasi-experimental, and nonexperimental field study designs. The analyses covered within the module range from single factor analysis of variance to hierarchical regression. At the end of the course, students are expected to understand the uses of these analyses, their underlying assumptions, computational procedures,

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and interpretation of a range of different inferential statistic procedures. In addition, students are expected to be able to critically appraise the results sections of research papers, and design and analyse their own research project.

Research Methods has the highest failure rate of all 2nd year degree modules. At the end of the every semester, students are asked to complete evaluation forms on each of the modules they have taken during that semester. One of the items in the student evaluation feedback forms states "the module was generally interesting and enjoyable". The average score on this item for Research Methods is consistently lower (where high is more desirable) than the scores for the other modules. Anecdotally students report that they struggle with this module, because they were not any good at or did not enjoy mathematics whilst at school.

All students have different capabilities with respect to a module. This may be due to a student's prior experience of the module's content or experience in a similar area. For example, with respect to statistics one student may have studied the subject or a similar one (e.g., mathematics) to 'A' level, whereas another may be relatively new to the subject. Achievement of a certain level of achievement based upon their own predicted scores for that module may be a more appropriate yardstick against which to assess students' success or otherwise rather than a measure of performance per se. The pass mark for the module is 40%, and the examination mark for this module contributes to the overall degree mark.

Second year undergraduate students in SSHES were approached during a scheduled Research Methods class and invited to volunteer for the study. Students were asked to predict what score they would get in the end of semester examination (see Appendix G). The instructions stated "Based on your understanding of the module to

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date and feedback from your assignments, please tick the box that indicates your realistic expectation of your final mark for the Research Methods module. The marks were organised in seven categories that ranged from 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, and 80+. These predicted scores categories were recoded using numbers ranging from one to seven.

Students were informed that this information would be kept confidential. Students were asked to give their consent for the researcher to use their end of module exam results, and lastly, on this same form, students were asked whether they were willing to participate in the next phase of the experiment. Those who agreed to this request were then asked to sign up for an interview with the author. The students were told that the study involved a short interview with the researcher.

Participants were randomly assigned to either a control or treatment group. Before the interview, participants were provided with instructions for the study (Appendix H), and given an informed consent form to sign (Appendix I)

Before the interview started, participants were asked to state their goal for Research Methods. The instructions stated, "By now you will probably have thought about the degree classification you are aiming for. What I would like you to do is take a few minutes to think about your goal for Research Methods. What mark are you aiming for?" Participants were then asked to complete the amended version of Vallerand et al.'s (1992) AMS.

Those participants randomly allocated to the treatment group took part in an interview based on the principles of Motivational Interviewing. An example of the script used for the treatment group is in Appendix J. The first part of the interview consisted of rapport

building. Essentially the researcher asked the participant about the reasons why they (the participant) had come to Bangor, and how they had fared in their first year here. The next part of the interview explored the participant's typical schedule. The researcher asked how many modules the participant was taking, how they spent a typical day, and how much time they spent studying outside lecture times. The researcher then became more directive and asked questions about Research Methods; for example, how much time (outside of lecture times) did the participant spend on Research Methods, how did the participant feel they were getting on with Research Methods, and how important was the module to the participant? The next part of the interview involved exploring the participant's motivation and ambivalence towards spending more time on Research Methods, essentially considering the pros and cons of such action. Next, the participants were asked how ready they were to spend more time on Research Methods and how confident they felt that they would spend more time on Research Methods. Finally, in the last part of the interview the participant was asked how they prepared for exams and the researcher and the participant discussed the various options available.

For the control group the interviews consisted of the first and last parts of the process, the rapport building and action planning. It was considered that it would provide a credible exercise for the control group. With students in close contact with each other, some discussion about the intervention is likely. However, because of the similarities between the processes for the two groups, students may not notice the difference and this may reduce the risk of possible resentment from, or demoralisation of, participants perceiving they are receiving less desirable treatments. Essentially the difference between the two groups was that with the treatment group the researcher encouraged the participant to explore the importance of Research Methods and the pros and cons of spending more time

studying Research Methods. Interviews for both groups took place over a two week period. The interviews for the treatment group took between 30 to 40 minutes to complete, whilst the interviews for the control group took between 20 and 30 minutes.

Approximately a week after the interviews, participants were asked to fill in the GPQ and AMS questionnaires again. Participants were reminded of their goal for the module. The questionnaires were distributed by hand, or by mail and accompanied by a letter of explanation (see Appendix K). Approximately six weeks later participants sat their end of module examination.

Participants' end of the semester examination results for Research Methods were compared with their predicted scores and their goals for the module. A participant's predicted scores and goals were said to be met if the participant's performance score on the examination met or exceeded the predicted score or goal. For example, if a participant's examination score was 63 and the predicted score was 50-59, and the goal was 60-69, then the participant was said to have met both the predicted score and the goal.

The researcher categorised the participant's goals into bands that corresponded to the predicted score categories. For example, a participant who stated their goal was 65% was allocated a goal band of between 60-69. A number of the goals set by the participants required an element of interpretation; therefore a researcher (not connected with the project) also categorised the goals into bands using the author's coding scheme. Intercoder reliability was assessed using Cohen's kappa (Cohen, 1960).

Analysis

Participants were randomly assigned to groups. However, an initial analysis was conducted to test if the groups (treatment and control)

differed at pretest. Analysis of variance was used to examine whether participants in the control and treatment groups differed in their age, predicted scores and performance scores. Pearson's chi square was used to examine gender differences.

Pearson's chi square was then used to examine the difference between the proportion of participants in the control group and treatment group who achieved or who did not achieve their predicted scores and their goal.

A 2x2 [(groups: treatment vs. control) x (time: pretest vs. posttest)) ANOVA with repeated measures on the second factor was used to examine the participant's scores on the GPQ and AMS scales. The relationship between performance, predicted score, and goal achievement and the GPQ and AMS scales was examined using correlations.

Results

Gender, Age, Predicted Scores, and Goal Differences Between Treatment and Control Groups

There were 29 participants in the control group (18 male and 11 female) and 29 in the treatment group (15 male and 14 female). Using Pearson's chi square the difference between the number of male and female participants in the control and treatment group was examined. No significant difference was found, $\chi^2 (1) = .63, p = .60$ (2 tailed).

Participants' ages ranged from 19 to 33 with a mean of 20.31 ($SD = 2.39$). Analysis of variance was used to examine whether there was any difference between the ages of the participants in the treatment and control groups. There was no significant difference, $F (1, 56) = 3.27, p = .08$.

Analysis of variance was used to examine whether there was a difference between the predicted scores for the control and the treatment groups. There was no significant difference, $F(1) = 2.94, p = .09$.

Analysis of variance was used to examine whether there was a difference in the participant's goals between the control and treatment groups. There was no significant difference, $F(1, 56) = 0.45, p = .51$.

Differences Between Predicted Scores and Goals

The researcher categorised all but one of the participant's goals into categories that corresponded to the predicted score categories. Cohen's kappa for inter-rater reliability was .91, $p = .00$. Of the 57 goals, 32 were the same as the predicted score, 22 higher, and 3 lower. Using Pearson's chi square the difference between the number of participants who achieved their goal and those who did not, dependent on whether the goal was the same, higher, or lower than the predicted score was examined. For those who had the same predicted score and goal, 20 achieved their goal and 12 did not. For those who had a higher goal than their predicted score, 6 achieved their goal and 16 did not. The 3 that had lower goals than their predicted score achieved their goal. There was a significant difference between the numbers of participants who achieved or did not achieve their goal dependent on whether goals were the same, higher, or lower than the participant's predicted score, $\chi^2(2) = 9.53, p = .01$ (2 tailed).

Descriptive Statistics for GPQ and AMS Scales

Table 16 details the descriptive statistics for the six GPQ scales and the seven AMS scales pre and posttest. For the pretest data the means for the GPQ scales (scoring 1 to 5) ranged from 3.82 to 4.43 and skewness ranged from -1.25 to -0.35. The GPQ scales produced alpha coefficients ranging from .67 to .86. For the AMS scales, (scoring 1

to 7) the means for the scales ranged from 1.30 to 5.47 and skewness ranged from -1.25 to 2.34. The AMS scales produced alpha coefficients ranging from .71 to .86.

For the posttest data the means for the GPQ scales ranged from 3.80 to 4.39 and skewness ranged from -1.14 to 0.10. The GPQ scales produced alpha coefficients ranging from .65 to .83. For the AMS scales the means for the scales ranged from 1.34 to 5.48 and skewness ranged from -1.73 to 2.52. The AMS produced alpha coefficients ranging from .81 to .92.

Detailed in Tables 17 and 18 are the descriptive statistics (means and standard deviations) for the GPQ and AMS scales for the participants in the control group ($n = 29$) and those in the treatment group ($n = 29$), pre and posttest. Detailed in Tables 19 and 20 are the descriptive statistics for the GPQ and AMS scales for the participants who did ($n = 36$) or who did not achieve their predicted score ($n = 22$), pre and posttest. Detailed in Tables 21 and 22 are the descriptive statistics for the GPQ and AMS scales for the participants who did ($n = 29$) or who did not achieve their goal ($n = 29$), pre and posttest.

Table 16.
Descriptive Statistics for the GPQ and AMS Scales Pre and Posttest

	Pretest				Posttest			
Scale	Mean	SD	Cronbach's α	Skewness	Mean	SD	Cronbach's α	Skewness
GPQ Ability	3.86	0.61	.79	-0.35	3.80	0.60	.75	-0.27
GPQ Commitment	4.22	0.53	.84	-0.66	4.32	0.48	.83	-0.45
GPQ Control	4.21	0.54	.72	-1.25	4.38	0.47	.65	-1.14
GPQ Success Expectation	3.82	0.49	.71	-1.17	3.99	0.48	.79	0.10
GPQ Support	3.94	0.69	.67	-0.70	3.92	0.64	.74	-0.13
GPQ Value	4.43	0.56	.86	-0.72	4.39	0.59	.81	-1.00
AMS To Know	4.90	0.93	.80	-0.51	4.83	1.00	.88	-0.91
AMS To Accomplish	4.26	0.92	.71	-1.17	4.48	1.04	.88	-0.75
AMS To Experience Stimulation	3.04	0.96	.84	-0.05	3.39	1.02	.84	0.00
AMS Identified	5.47	0.90	.71	-0.64	5.48	1.06	.88	-1.73
AMS Introjected	4.20	1.12	.73	-0.27	4.57	1.09	.81	-0.68
AMS External Regulation	4.75	1.17	.85	-1.25	5.03	1.20	.91	-0.85
AMS Amotivation	1.30	0.57	.86	2.34	1.34	0.73	.92	2.52

Note: $N = 58$. For the six GPQ scales minimum possible scale score 1, maximum 5; for the AMS scales minimum possible scale score 1, maximum 7.

Table 17.

Means and Standard Deviations for GPQ scale scores for those in the Treatment and Control Groups

| | Treatment | | | | Control | | | |
| | Pre | | Post | | Pre | | Post | |
Scale	Mean	SD	Mean	SD	Mean	SD	Mean	SD
GPQ Ability	3.80	.58	3.67	.69	3.92	.64	3.83	.50
GPQ Commitment	4.13	.58	4.29	.42	4.32	.47	4.34	.54
GPQ Control	4.12	.57	4.42	.46	4.30	.49	4.34	.49
GPQ Success Expectation	3.74	.51	3.99	.51	3.91	.46	4.00	.45
GPQ Support	3.84	.80	3.89	.64	4.06	.55	3.94	.65
GPQ Value	4.52	.54	4.67	.53	4.34	.58	4.31	.65

Note. $N = 29$ in control group and 29 in treatment group.

Table 18.

Means and Standard Deviations for AMS scale scores for those in the Treatment and Control Groups

| | Treatment | | | | Control | | | |
| | Pre | | Post | | Pre | | Post | |
Scale	Mean	SD	Mean	SD	Mean	SD	Mean	SD
AMS To Know	4.98	.78	4.88	.94	4.81	1.07	4.78	1.07
AMS To Accomplish	4.36	.66	4.51	.97	4.16	1.12	4.46	1.12
AMS To Experience Stimulation	3.14	.86	3.43	1.04	2.95	1.06	3.34	1.01
AMS Identified	5.54	.74	5.69	.81	5.41	1.05	5.27	1.24
AMS Introjected	4.32	1.02	4.72	.98	4.09	1.20	4.41	1.18
AMS External Regulation	4.92	.74	5.19	.85	4.59	1.47	4.87	1.46
AMS Amotivation	1.26	.48	1.23	.56	1.34	.66	1.44	.86

Note. $N = 29$ in control group and 29 in treatment group.

Table 19.

Means and Standard Deviations for the GPQ Scale Scores for those Who Did or Did Not Achieve Their Predicted Score

| | Achieved Predicted Score | | | | Did Not Achieve Predicted Score | | | |
| | Pre | | Post | | Pre | | Post | |
Scale	Mean	SD	Mean	SD	Mean	SD	Mean	SD
GPQ Ability	3.88	.62	3.87	.61	3.84	.61	3.68	.58
GPQ Commitment	4.29	.59	4.36	.47	4.11	.40	4.25	.50
GPQ Control	4.23	.49	4.45	.41	4.18	.62	4.26	.55
GPQ Success Expectation	3.83	.47	4.06	.47	3.82	.52	3.89	.47
GPQ Support	4.01	.69	3.89	.70	3.85	.70	3.97	.54
GPQ Value	4.49	.63	4.48	.58	4.33	.43	4.24	.58

Note. $N = 36$ achieved predicted score and 22 did not achieve predicted score.

Table 20.

Means and Standard Deviations for AMS Scale Scores for those Who Did or Did Not Achieve Their Predicted Score

| | Achieved Predicted Score | | | | Did Not Achieve Predicted Score | | | |
| | Pre | | Post | | Pre | | Post | |
Scale	Mean	SD	Mean	SD	Mean	SD	Mean	SD
AMS To Know	4.83	.94	4.63	1.03	5.00	.92	5.16	.87
AMS To Accomplish	4.19	1.01	4.38	1.11	4.36	.76	4.66	.91
AMS To Experience Stimulation	3.02	.92	3.19	1.04	3.08	1.04	3.70	.92
AMS Identified	5.42	.98	5.47	1.09	5.57	.77	5.50	1.02
AMS Introjected	4.10	1.20	4.51	1.14	4.36	.96	4.67	1.01
AMS External Regulation	4.72	1.10	5.06	1.06	4.81	1.29	4.98	1.29
AMS Amotivation	1.27	.62	1.28	.66	1.34	.50	1.42	.83

Note. $N = 36$ achieved predicted score and 22 did not achieve predicted score.

Table 21.

Means and Standard Deviations for the GPQ Scale Scores for those Who Did or Who Did Not Achieve Their Goal

| | Achieved Goal | | | | Did Not Achieve Goal | | | |
| | Pre | | Post | | Pre | | Post | |
Scale	Mean	SD	Mean	SD	Mean	SD	Mean	SD
GPQ Ability	3.93	.65	3.87	.56	3.79	.56	3.72	.63
GPQ Commitment	4.24	.49	4.35	.51	4.21	.57	4.28	.46
GPQ Control	4.24	.51	4.40	.44	4.18	.57	4.36	.52
GPQ Success Expectation	3.91	.45	4.15	.52	3.74	.52	3.84	.38
GPQ Support	3.91	.65	3.84	.66	3.98	.74	3.99	.63
GPQ Value	4.45	.62	4.39	.62	4.41	.51	4.39	.57

Note. $N = 29$ achieved their goal and 29 did not achieve their goal.

Table 22.

Means and Standard Deviations For AMS Scale Scores for those Who Did or Who Did Not Achieve Their Goal

| | Achieved Goal | | | | Did Not Achieve Goal | | | |
| | Pre | | Post | | Pre | | Post | |
Scale	Mean	SD	Mean	SD	Mean	SD	Mean	SD
AMS To Know	4.76	1.01	4.62	1.13	5.03	.84	5.04	.82
AMS To Accomplish	4.02	1.05	4.32	1.12	4.50	.71	4.65	.95
AMS To Experience Stimulation	3.00	.97	3.36	1.05	3.09	.97	3.41	1.01
AMS Identified	5.38	.97	5.40	1.14	5.57	.84	5.56	.98
AMS Introjected	4.00	1.09	4.46	1.03	4.41	1.12	4.68	1.15
AMS External Regulation	4.59	1.19	4.94	1.26	4.91	1.14	5.12	1.15
AMS Amotivation	1.35	.68	1.36	.72	1.24	.45	1.31	.74

Note. $N = 29$ achieved their goal and 29 did not achieve their goal.

Differences in Performance Scores, and Achievement of Predicted Score and Goal Between the Treatment and Control Groups

For the 58 participants performance scores ranged from 30 to 88, mean of 56.65 ($SD = 14.24$). Analysis of variance was used to examine whether there was a difference in the performance scores for the control and treatment groups. There was no significant difference, $F(1, 56) = 0.36, p = .55$.

Using Pearson's chi square the difference between the numbers who achieved their predicted scores and those who did not in the control or treatment groups was examined. In the control group 15 achieved their predicted scores and 14 did not. In the treatment group 21 achieved their predicted score and 8 did not. There was no significant difference, $\chi^2(1) = 2.64, p = .10$ (2 tailed).

Using Pearson's chi square the difference between the number of participants who achieved their goal and those who did not in the control and the treatment groups was examined. In the treatment group 14 participants achieved their goal and 15 did not. In the control group 15 participants achieved their goal and 14 did not. There was no significant difference between the numbers of participants who achieved or did not achieve their goals between the two groups, $\chi^2(1) = 0.07, p = .79$ (2 tailed).

Table 23.
Correlations between Performance Scores, Goal Achievement, and Predicted Score Achievement and the GPQ and AMS scales at Posttest

Follow up variable	Performance	Predicted Score Achievement	Goal Achievement
GPQ Ability	.25	-.15	.10
GPQ Commitment	.14	-.11	.02
GPQ Control	.35**	-.20	.03
GPQ Success Expectation	.20	-.18	.32*
GPQ Support	.00	.06	-.16
GPQ Value	.11	-.20	-.01
AMS To Know	-.20	.26	-.23
AMS To Accomplish	-.08	.13	-.20
AMS To Experience Stimulation	-.20	.25	-.08
AMS Identified	.01	.02	-.09

Follow up variable	Performance	Predicted Score Achievement	Goal Achievement
AMS Introjected	.07	.07	-.11
AMS External Regulation	.04	-.04	-.03
AMS Amotivation	-.14	.09	.05

Note. $N = 58$. *p <. 05. **p < .01.

Relationships between GPQ and AMS scores and outcomes of performance, predicted score achievement, and goal achievement are shown in Table 23, in the form of correlations. At the .05 level, performance correlated positively with GPQ scale of Control. Predicted score achievement did not correlate significantly with any of the GPQ or AMS scales, and goal achievement correlated positively with GPQ scale of Success Expectation.

Analysis of GPQ and AMS Scores Pre and Posttest

The results of the 2x2 ANOVA with repeated measures are shown in Table 24. Alpha levels were adjusted using the Bonferroni technique. Thus with 13 tests only results significant at the .004 level are reported as significant. The mean scores for the GPQ scales of Control and the AMS scales of Extrinsic Motivation - External Regulation, Extrinsic Motivation - Introjected, and Intrinsic Motivation - To Experience Stimulation all increased significantly within subjects. There were no significant between subjects or interaction (group x time) effects.

Table 24.

Difference Within Subjects and Between Subjects By Control or Treatment Group.

Scale	Within Subjects		Between Subjects		Interaction	
	F	p	F	p	F	p
GPQ Ability	0.93	.34	0.39	.53	0.20	.66
GPQ Commitment	2.28	.14	1.07	.31	1.20	.28
GPQ Control	8.89	.00*	0.16	.69	5.84	.02
GPQ Support	0.16	.70	0.81	.37	1.15	.29
GPQ Success Expectation	7.92	.01	0.58	.45	1.69	.20
GPQ Value	0.62	.44	1.35	.25	0.03	.88
AMS To Know	0.56	.46	0.31	.58	0.20	.65
AMS To Accomplish	3.68	.06	0.31	.58	0.44	.51
AMS To Experience Stimulation **	10.84	.00*	0.34	.56	0.26	.62
AMS Identified	0.00	.96	1.35	.25	2.53	.12
AMS Introjected	10.68	.00*	1.04	.31	0.12	.73
AMS External Regulation	9.09	.00*	1.22	.27	0.01	.93
AMS Amotivation	0.48	.49	0.76	.39	1.34	.25

Note. Degrees of freedom = 1, 56.

* = Significant at $p \leq 0.004$ level.

** = Test of equality of covariance matrices and error variances violated (interpret with caution)

Additional Analysis

Predicted scores for the module were also obtained from 35 students who did not take part in the interviews (nontreatment group). This information was used for two reasons. Firstly, those students who declined to volunteer for the experiment may be different to those who did; therefore, it was considered important to compare participants with nonparticipants. Secondly, because the interviews (with the control and treatment groups) were similar in that they both contained action planning, both may have had similar effects (positive or negative) on performance scores or predicted score achievement rates. Therefore, differences between performance and attainment rates for the three groups were examined. Differences between the control group, treatment group, and nontreatment group were examined using analysis of variance. There was no difference between the three groups on age, (F (2, 90) = 1.06, p = .35), level of predicted scores (F (2, 90) = 1.70, p = .19), and performance scores (F (2, 90) = 0.26, p = .77). Using Pearson's chi square the difference between the number of male and female participants in the three groups were examined. There was no significant difference χ^2 (2) = .69, p = .71 (2 tailed). Differences between the three groups in their achievement of predicted score was examined using Pearson's chi square. In the treatment group 21 achieved their predicted score and 8 did not. In the control group 15 achieved their predicted scores and 14 did not. In the nontreatment group 25 achieved their predicted score and 10 did not. There was no significant difference, χ^2 (2) = 3.60, p = .17 (2 tailed).

Discussion

Overall, the interviews based on the principles of Motivational Interviewing (e.g., Rollnick et al., 1999) when compared to the action planning only interviews had no additional impact. For example, there was no significant difference in the numbers who achieved (or did not achieve) their predicted score or self set goal dependent on

what group (treatment or control) they were assigned to. Additionally, there was no significant change (increase or decrease) in the GPQ or AMS scores dependent on what group participants were assigned to. Thus, none of the findings supported any of the predictions.

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There are many reasons why the intervention failed to affect performance or goal achievement or indeed GPQ and AMS scores. One reason may be attributable to the inexperience of the researcher in conducting the interviews. The interviews for the treatment group were based on the principles of Motivational Interviewing. Motivational Interviewing is often performed by qualified counsellors who have been additionally trained in the Motivational Interviewing process. Although Rollnick et al. (1999) suggested that you do not need to be an experienced counsellor in order to succeed (p. 14) they did suggest that one needs to be familiar with the practice of using listening skills (e.g., open questions, summarising, and reflective listening) in addition to being familiar with the methods described in their book. The researcher had attended a general counselling course, and a workshop on motivational interviewing, and watched a number of videos, but has no formal experience of counselling. Therefore it is suggested that the researchers' inexperience may have contributed to the results.

Individuals set their own goals and goal perceptions scores for scales such as value and commitment were high pretest (mean = 4.22 (SD = .53) and 4.43 (SD = .56) respectively). Therefore, there may have been some ceiling effects. Additionally the high scores for some of the scales would suggest there was no perceived need to change.

Discussion between groups is often a problem highlighted in intervention studies because of the threat to internal validity. In this

study there may have been some discussion between participants in the different groups that negated the differences between them. Every effort was made to maximise the number of participants, but there was a finite number of individuals who were eligible to participate in this study as volunteers had to be members from the research methods class. There were approximately 110 students registered for the class. The number in the class on the day the researcher approached the class is unknown. Initial data was gathered from 97 members of the class. Of the 97, 62 participants agreed to participate in the interviews, 1 left the course, 1 failed to return their posttest questionnaire and 2 did not take the end of module examination. This left 58 participants. Cohen (1992) iterates an earlier call for researchers to consider the size of the effect that they are looking for in order to ascertain how many subjects they require, in order to be confident that they have the power to find that effect. There is no previous research in this area on which to base the calculation of sample size. However, for example, to conduct chi square analysis with one degree of freedom to detect medium effects ($\alpha = 0.05$ level) a sample size of 87 is required (Cohen, 1992). Failure to find any significant effects may be due to the size of the sample, which falls somewhat short of the recommended number.

In an effort to ensure that the control group had a credible activity, there were similarities between the control and treatment groups that may account for a lack of differences between the two groups. However, the additional analysis conducted with the data provided by those who took part in neither interview also suggested there was no differences between the three groups on performance and predicted score achievement which suggests that neither interviews had a significant effect on achievement levels.

A significant correlation between the GPQ scale of Success Expectation (posttest) and goal achievement was found, suggesting

that those who subsequently achieved their goals had higher success expectation of doing so than those who did not achieve their goal. It was a low to moderate correlation and it is somewhat surprising that other GPQ scales failed to show any relationship with goal achievement. There are a number of potential explanations for these findings. Questionnaires were completed approximately six weeks before their examination. It is very unlikely that when participants filled in the questionnaires that they had started to prepare for their examination. Participants' goal perceptions may have changed when they began to prepare for their examination because of the realisation that they knew more or perhaps less than they had envisaged. A more accurate assessment of their goals may have been made closer to the exam time. Both the participants' predicted scores and their goals for this module were based on their perceived understanding in the classroom and feedback from an assignment (which was optional so therefore not all students would have completed it). Without ongoing and accurate feedback, participants may not have been able to accurately predict their scores or set appropriate (realistic) goals for the module. Lastly, it may be that the examination had an element of the unknown. Indeed, the lecturer had redesigned the examination for this module and participants may have been unable, because of lack of prior experience, to accurately predict their scores or set appropriate (realistic) goals for the module.

Whilst not directly hypothesised, the author took the opportunity to explore the discrepancy between individuals' predicted score (a realistic expectation) and their goal, and whether or not achievement was related to this discrepancy. From the analysis, it is suggested that those who set the same as their predicted score for the module (realistic goals) were more likely to achieve their goal.

The GPQ scale of Control (posttest) correlated with the performance scores for the end of module examination, suggesting those who scored high in perceived control did better in their end of module

examination. This relationship between control and performance supports many similar findings (Skinner, 1996).

For all participants there was an increase in scores for the AMS scales of Intrinsic Motivation – To Experience Stimulation, Extrinsic Motivation – Introjected, and Extrinsic Motivation – External Regulation. It is suggested that participants felt extrinsic pressure may have increased because of the interviews or because it was the end of the semester participants' energies and thoughts may have been focused on results. The approaching assignment deadlines and examinations could have resulted in an increase in the Intrinsic Motivation – To Experience Stimulation scale. For all participants there was an increase in scores for the GPQ scale of Control. In an effort to provide a credible alternative intervention for the control group in line with guidelines (Perkins & Epstein, 1988), there were a number of similarities between the interviews for the control and treatment groups. Both groups discussed action planning for the exams, thus the increase in the scores for the GPQ scales of Control is not unexpected. However, none of these main effects can be attributed to the interviews as they may be due to history or maturation effects. For example, the increases could be due to something that happened in class.

Cronbach's alpha for the 13 scales, pre and posttest, were generally adequate (Nunnally, 1978). Support (pretest) and Control (posttest) produced alphas of .67 and .65 respectively. However, both these scales contain negatively worded items that, rather than measuring the opposite or absence of this variable, may be measuring something slightly different. For a fuller discussion of these issues with respect to these scales, individuals are directed to Chapter Three.

In conclusion, it was expected that the interviews would result in changes in goal perceptions that would indicate that the interviews

would be a useful intervention strategy for existing goal setting programmes. However, the findings of this study are not clear. Some main effects in increases in the key dimension of Control may have been a result of the action planning (used with both the treatment and control groups). However, further research is needed to support the findings. As the participants set their own goals, goal perceptions of commitment and value were high and it was unlikely that the interviews could have stimulated significant increases (ceiling effect). However, this does not mean that such interviews based on the principles of motivational interviewing would not be successful in changing these key perceptions. In the previous research detailed in this thesis it was not possible to measure (accurately) actual goal achievement. Therefore the relationship between Success Expectation and goal achievement in this study is the first evidence that the scales may be linked to goal attainment.

Of course, these results may not necessarily transfer to other contexts (e.g., the workplace) and indeed more research in similar and other contexts (bearing in mind the issues of timing and the need for the individual to have accurate feedback in order to set appropriate goals) needs to be completed to support these findings.

CHAPTER 6
General Discussion

Main Findings

The principal aim of this research was to examine (using a theoretical framework) the effects of individuals' goal perceptions on individuals' commitment and affective responses to their goals. In order to fulfil this aim, it was necessary to design a questionnaire to measure individual's perceptions of their goals.

The first task when designing the questionnaire was to identify putative goal dimensions that were proposed to affect goal commitment and affect. This was accomplished using a theoretical framework initially based on value expectancy models of goal commitment (e.g., Hollenbeck & Klein, 1987), with reference to various mainstream psychological theories as outlined in Chapter One of this thesis (e.g., Deci & Ryan, 1985), and research on goals and affects (e.g., Emmons, 1986). A total of 25 putative dimensions were identified (see Chapter Two).

The next task was to design scales to measure the 25 putative dimensions. Items were written to measure each dimension and the questionnaire was piloted (see Chapter Two). Using a sequential approach to confirmatory factor analysis that entailed testing scales singly (in one factor models) and then testing scales in pairs (two factor models), items that were strong and unambiguous indicators of their intended construct were identified. Following the pilot study, a second (longitudinal) study was completed (see Chapter Three). In this study, the same sequential confirmatory factor analysis approach as in the pilot study was used. The majority of scales displayed adequate reliabilities and fit statistics at baseline and at followup. At baseline, 21 of the 25 scales met the fit criteria (and the remaining 4 still had adequate

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coefficient alphas). Scales that contained both positive and negatively worded items tended not to fit as well as scales that contained only positive or only negatively worded items. It was suggested that care needed to be taken when writing positively and negatively worded items to ensure that the positive and negatively worded items were measuring the same construct. Some amendments to certain scales were recommended. In conclusion, the GPQ shows satisfactory factorial validity.

In addition to examining the factor structure of the scales, goals were categorised. A pragmatic approach was adopted and goals were categorised in a similar way to Roberson (1989) with reference to the goal content. It was found that different types of goals had different characteristics. For example, Career Advancement goals involved more Competition than did Work Specific or Training/Qualifications goals (see Chapter Three).

In addition to examining the factor structure of the GPQ scales, it was considered appropriate, because of the recent debate on the structure and measurement of affect (see Diener, 1999), to examine whether the affects were better represented by unipolar or by bipolar measures and by differentiated measures or by generalised measures. The confirmatory factor analyses suggested that the affects were better represented by unipolar than by bipolar measures, and by differentiated measures rather than generalised measures (see Chapter Four).

In order to examine the effects of individual's goal perceptions on their commitment and affective responses to their goals a model was specified that explored both the antecedents of commitment (based on Hollenbeck and Klein's, [1987] goal commitment model) and affective responses to goals (based on research into goals and affects e.g., Emmons, 1986). The

model was tested using structural equation modelling (see Chapter Four). Critically, the results suggested that both value and success expectation enhanced commitment. However, the determinants of the positive and the negative affects were different; it was value that determined the positive affects whilst success expectation determined the negative affects. In addition, the determinants of value and success expectation were different. For example, control was identified as a major determinant of success expectation, and origin as a major determinant of value.

An intervention study was designed that aimed to change key goal perceptions using a process based on the principles of Motivational Interviewing (e.g., Rollnick et al., 1999). See Chapter Five. There were no significant difference in achievement levels and changes in goal perceptions for those involved in the treatment group (interviews based on the principles of Motivational Interviewing) when compared to those in the control group (who went through a process of action planning). There was a significant increase in perceptions of Control for both groups. Success Expectation was related to subsequent goal achievement and Control perceptions were linked to overall performance. The results of this study are inconclusive; there is, however, tentative evidence to suggest that the interviews would be a useful intervention strategy.

Methodological Limitations
In this section, the author attempts to address the methodological limitations of the research and to acknowledge some of the threats to the internal and external validity of the findings. The first part of this section looks at the issues associated with scale development. The second part of this section looks at the issues associated with casual modelling, and the third part of this section looks at the issues associated with conducting intervention studies.

Scale Development

The first task in the design of the GPQ was to identify the dimensions to be included. The researcher attempted to ensure that the GPQ reflected the full domain of goal perceptions. Thus an attempt to address content validity issues was made. Although it is not suggested that these 25 scales included in the GPQ represent an exhaustive set of dimensions on which goal perceptions may vary, this questionnaire does extend the number of dimensions measured when compared to previous questionnaires.

Before any research is conducted, it is important to consider the size of the effect that one is looking for in order to ascertain how many subjects are required in order to be confident that there is enough 'power' to detect that effect (e.g., Cook & Campbell, 1979; Cohen, 1992). For the scale development there was little evidence (particularly from field studies) on which to base a calculation of power. However, there are guidelines (e.g., Nunnally, 1978) for sample sizes although these are primarily with respect to research that uses exploratory factor analysis. Rather than using exploratory factor analysis (a data driven analysis), this research used confirmatory factor analysis, which is a relatively new theory driven analysis, for which the guidelines are still being written and revised. With confirmatory factor analysis, a wish to obtain large samples to reflect the population process can backfire, as large samples cause trivial substantive deviations that lead to rejection of the model (Tanaka, 1987). However, if the sample size is low the power to detect even large misspecifications will be lowered. Tanaka (1987) suggests that sample size should reflect the number of parameters to be estimated. Without setting absolute guidelines, he suggests that a sample of 50 would be appropriate for a single latent variable with 4 measured indicators, but inappropriate for 20 measured variables and 4 latent variables. Using a sequential confirmatory factor analysis approach (as

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recommended by Jöreskog, 1993) ensured the models were kept relatively small in an attempt to ensure that these guidelines were not violated. However, it is acknowledged that guidelines or "rules of thumb" are no substitute for a direct consideration of power wherever possible.

For both studies there was a concerted attempt to collect a larger sample size than was obtained. In fact, the minimum sample size sought for both studies was approximately 200. This number would have ensured that the sample size met Tanaka's (1987) recommendations.

The response rate for the pilot study was 13%. There was therefore a degee of self-selection. Some scales in the pilot study were skewed (e.g., value), and one interpretation of this skewness may be that it was primarily those who valued their goal who completed and returned their questionnaire. It is acknowledged that the questionnaire used was long and that traditionally the response rate for mailed surveys is low. Every effort, including followup letters, e-mails, and verbal reminders via team meetings was employed in an attempt to maximise the response rate. However, the response rate was disappointing.

The lesson was learnt and for the main study the author attempted to gain direct access and individually invite people to participate. This was not always possible and some questionnaires were distributed via team briefings or by managers; thus, a calculation of the response rate for the main (longitudinal) study was not possible. Individually approaching prospective participants can be time consuming and not always feasible as was the case in the main study where access to certain areas of the organisation as well as to individuals was restricted. Options for maximising participation may include the utilisation of company's intranet facilities, although the problem of maximising response rates in

the workplace is not easily addressed. For example, employees may have been suspicious, sceptical, reluctant to voice their opinions, or just too busy to do so.

In the main study, there was an assessment of the fit (using confirmatory factor analysis) of each scale at baseline and at followup. The fits for the follow-up scales were similar to those for the baseline for most of the scales but there were some differences. For example, the scale of publicness had a particularly poor fit at baseline but at follow-up the fit was considered adequate. There could be a number of reasons for this change in fit from baseline to follow-up. Jagodzinski, Kühnel, and Schmidt (1987) suggest that the reasons for the change may be due to individuals reflecting on their attitudes or opinions, or having been initially asked their opinion subsequently crystallizing their thoughts on the matter, producing in the second wave a more stable opinion. It may have something to do with familiarity with the questionnaire and the interviewer. Scores may have been affected by participants discussing the research with their colleagues (having completed the initial questionnaire) and their subsequent responses to the second questionnaire reflecting that discussion.

The strengths of employing longitudinal research when examining cause and effects are discussed by Menard (1991) and Finkel (1995). In this research, the follow-up data was used primarily to support scale development and to explore any possible lagged affects of key goal dimensions. In addition to the possible problems highlighted above associated with the collection of follow-up data there is also the additional problem of attrition, individuals not responding to the request for follow-up information that can affect the internal validity of a study.

A large nonresponse to the second wave of data collection can have serious effects on external and internal validity of the study. If nonrespondents are

missing completely at random, panel attrition only threatens the statistical conclusion validity (Campbell & Stanley, 1979). However, according to Hagenaars (1990), there may be little reason to expect that nonresponse occurs at random. Individuals will have specific reasons for not participating in the follow-up, reasons which may be related to the variables under study.

Often test-retest analysis is used to provide evidence for the reliability of scales. However, the moderate test-retest correlations found in the longitudinal study (see Chapter Three) are to be expected, as goal perceptions are likely to vary not only between persons and goals but also across time (Austin & Vancouver, 1996). Thus, they are not necessarily indicative of low measurement reliability.

A major part of questionnaire development is the establishment of construct validity (Spector, 1992). Rigorous analysis in the form of single and paired confirmatory factor analysis was conducted on the GPQ's scales to ascertain that the items for each scale were measuring a single construct. This process was able to highlight possible areas of concern with respect to construct validity. For example, it was suggested that the items written for the Control scale were not all measuring the same construct; rather the negatively worded items were measuring the consequences of a lack of control (e.g., helplessness). Goals were categorised (by content) and their relationship with goal dimensions examined. This additional analysis provided some further construct validation evidence, although it is not suggested that this provides a comprehensive assessment of construct validity and further research is necessary.

Structural Equation Modelling
According to Austin and Vancouver (1996), a proliferation of interrelated goal dimensions makes an examination of the goal construct problematic. They suggested that there are too many putative dimensions with

minimal interconnections established empirically. Many of the validity issues addressed above with respect to scale development and the use of confirmatory factor analysis are also relevant when it comes to exploring the relationships between dimensions. However, there are additional methodological limitations that need to be highlighted concerning the exploration of the relationships between goal dimensions.

When discussing large numbers of correlations the numbers of analysis that are to be conducted have to be considered when setting alpha levels. Schutz and Gessaroli (1993) suggested that one cannot rely on significance tests on large numbers of correlation coefficients without running an increased risk of making Type I errors. Because of the large number of variables measured in this research, models and hypothesis were clearly stated a priori and alpha levels amended in an attempt to off set the increased risk of making Type I errors when discussing correlations.

Primarily the relationships between goal dimensions were explored using structural equation modelling which is a sophisticated theory driven analysis that involved the design and testing of theoretical models. This process addresses construct validity issues as well as theoretical development. Overall, the results of the structural equation modelling were consistent with the model tested and existing theory. Some amendments to the original model were made (see Chapter Four). However, these amendments were supported/justified with reference to previous theoretical/empirical evidence.

Not all the dimensions measured in this research were utilised in the structural equation modelling; thus there may be a problem with respect to content validity. By not including all the dimensions measured, one cannot be sure that the relationships found between dimensions are not as a result of their relationship with other variable(s) that were not included in the model.

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It is suggested (Austin & Vancouver, 1996) that investigations that address theoretical issues in applied settings will lead to greater progress than either theoretical or applied investigations alone and that increasing our knowledge of how goals work outside of the laboratory setting will aid the modification and design of effective goal setting processes (Lee et al., 1991). The main study was conducted in five different organisations. It is suggested therefore that the results of this research may be applied to other workplaces and are not restricted to a certain type of organisation.

The self-selection of participants is one of the main methodological issues that affects the extent to which the results of the research can be generalised either to other similar individuals and situations or the set of different individuals and situations. In the pilot study respondents replied to a postal request, therefore the sample was self-selecting. In the main study participants were, where possible, approached and those approached were generally willing to take part in the study, but there was still an element of self-selection.

In addition to all the access and logistic problems associated with research in the workplace there were problems of the effect of the research and researcher on the workforce. Often the researcher had to be accompanied by a member of staff (particularly in the case of the nuclear power station). The researcher's presence probably caused a certain of amount of disruption or distraction to the workers. Perhaps more importantly the researchers presence may have raised expectations. If individuals' are asked questions regarding their work goals and take time out to complete the questionnaires there may be some expectation that problems highlighted in the questionnaire will be addressed. Feedback to organisations was provided (on request), but the researcher had no influence on how or if the organisations dealt with that information. Overall, however, it is suggested that the possible advantages of

conducting research in the workplace in terms of external validity outweigh the disadvantages.

Intervention Study

The sample size for the intervention study was limited by the size of the class. There were approximately 110 students registered for the class. Initial data were gathered from 97 members of the class. Of the 97, 62 participants agreed to participate in the study proper, 4 participants were lost to attrition, leaving 58 participants. A power calculation of sample size requirements for this study (see Chapter Five) suggested a need for a sample size of 87; thus, the sample size for this study falls somewhat short of this recommendation. The failure to find any significant differences between the treatment and control groups may have been because of the shortfall in participants. When sample sizes fall beneath recommended levels, there is an increased likelihood of making an incorrect no-difference conclusion (Type I error).

Many (although not all) of the threats to internal validity are ruled out by the random allocation of participants to treatment groups (Campbell & Stanley, 1979). In the intervention study, participants were randomly allocated to either the treatment or control group. In addition, analysis was conducted to ensure that participants in the two groups (and participants and non participants) were not significantly different on a number of variables (e.g., age, gender, and performance scores).

In the intervention study, contrary to the hypothesis, there were no significant differences on achievement levels and goal perceptions between the two groups following the interviews. This may be due to the similarities between the treatments for the group (both interview processes may have been equally effective or ineffective) or because of the placebo effect. According to Campbell and Stanley (1979), "any placebo therapy which is

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plausible enough to look like help to the student is apt to be as good a therapy as is the treatment we are studying" (p.16). As well as the treatments being as equally as effective (or ineffective) another reason why there was no difference between groups may be due to the fact that the students all knew each other and there may have been discussion between participants that led to a diffusion of the effect of the treatment.

The way a treatment is implemented may differ from participant to participant not only when different people are responsible for implementing the treatment but also when the same person has sole responsibility (Cook & Campbell, 1979). The author attempted to keep to a script for all participants, but the very nature of the interview is client led and therefore it is acknowledged that there may have been differences if not in approach then in content. According to Cook and Campbell (1979), a lack of standardization will inflate error variance and decrease the chance of obtaining true differences.

There were significant changes in perceptions of control for both groups. However, this may not be attributable to the treatment(s) per se but the 'testing effect'. According to Campbell and Stanley (1979) a reactive effect can be expected whenever the testing process is in itself a stimulus to change rather than a passive record of behaviour. Thus, the changes in both groups could have been because of the testing process per se or what is termed the Hawthorne effect; participants may have changed because of the attention paid to them.

A further issue with respect to the interviews conducted in the intervention study is concerned with construct validity. Although the author seeks only to claim that the interviews were 'based on the motivational interview process' and not that they were 'motivational interviewing', there is still a construct validity issue concerning the exact nature of the interviews.

Scripts were considered by an independent expert who suggested the phrase 'based on the motivational interview process'; thus, an effort was made to verify the validity of the interviews.

The student's knowledge that he/she was participating in an experiment might have affected the results. For example, the participants may have attempted to second-guess the experimenter's hypothesis and be "helpful", and/or responses may have been affected by social desirability. Rather than the treatment, history effects may have affected participant's perceptions. In Chapter Five, the author details quite specific reasons why there were no differences between the treatment groups or why perceptions failed to impact on performance or goal attainment, for example, something may have occurred in class that affected the results, the timings of the examination in relation to the administration of the questionnaire etc. However, rather than repeat the points discussed therein, interested readers are directed to Chapter Five for further discussion of these issues.

In the intervention study, participants were approached and asked to volunteer for the experiment. Those who volunteered for the experiment were compared to those who declined to do so on a number of variables and there were no significant differences between participants and nonparticipants. However, although this study may not be affected by self-selection bias, so that these findings may be generalized to other university or education settings, these results may not be generalised to other contexts such as the workplace or a sporting context. It is argued however, that a students' place of education is in effect their workplace. The tasks students have to complete to obtain their degree are not substantially different in effect from the work tasks that individuals 'at work' have to complete. Thus, it may be that these results can be generalised not only to other educational settings but also to organisations.

Theoretical Implications

One of the main aims of the study was to design a generic scale to measure goal perceptions in order to facilitate the development and testing of context free theories. In many of the existing scales items are written in such a way as to limit their applicability. For example, Locke and Latham's (1984) (see Lee et al., 1991) workplace questionnaire includes item such as "My boss is supportive with respect to encouraging me to reach my goals" and "My job goals lead me to take excessive risks". Although in this research programme the questionnaire has primarily been used in an organisational context, a number of the scales were used in the intervention study, a university setting. Respondents in the intervention study reported no difficulty in completing the questionnaire and the scales generally provided adequate Cronbach's alpha (Cronbach, 1951). Thus, it is suggested that the GPQ can be used as a generic questionnaire to facilitate the development of context free theories (Austin & Vancouver, 1996).

This questionnaire is multidimensional and extends the number of goal dimensions previously measured by existing goal perceptions questionnaires. Thus, although researchers may wish to select only certain scales from the 25 included in the GPQ, they have a consistent (e.g., the same response format) tool to measure a myriad of goal perceptions that has some initial evidence to support its validity.

The main aim of the research programme was to examine (using a theoretical framework) the effects of individuals' goal perceptions on individuals' commitment and affective responses to their goals. The model tested was derived from Hollenbeck & Klein's (1987) value-expectancy model of commitment, but also incorporated Emmons' (1986, 1989) proposal that value influences positive affects whilst success expectation influences negative affects. This research has extended previous research in this area by

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testing the mediating role played by value and success expectation on commitment that Klein et al. (1991) were unable to test. In addition, this research has tested some dimensions that according to Klein et al. have been infrequently examined (e.g., goal conflict) or not examined at all (e.g., competition). Many of the relationships proposed in this extended model were supported, as was the usefulness of extending the model to include affects. It should be noted, however, that some of the dimensions measured in this research differ to those specified in Hollenbeck and Klein's model. For example, rather than a locus of control, in line with previous recommendations (e.g., Terry, 1993) the control dimension measured in this research referred specifically to the goal and was salient to the behaviour, rather than a generalised locus of control dimension. In addition, dimensions such as supervisor support were amended to reflect support received from any source to ensure that the model (and the questionnaire) could be used in any situation and was not restricted to a particular setting.

Hollenbeck and Klein (1987) and Locke and Latham (1990) differentiate between the antecedents of value and the antecedents of expectancy. It was noted however, in the introduction to this thesis, that Wofford et al.'s (1992) model does not. This research found that the determinants of value and success expectation were different, thus in line with the proposal that this distinction between the antecedents of expectancy and those of value might prove to be important, it is suggested that theory should differentiate between the antecedents of value and success expectation.

Determinants of value included origin, specificity, conflict, publicness, and complexity. Prominent among these would be origin. Thus, the possible positive impact of letting individuals participate in the goal setting process is highlighted in line with findings from more recent research in a field setting (Yearta et al., 1995) and the recommendations from Deci and Ryan's (e.g., 1985) theory of self-determination that promotes the

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need for participation within the goal setting process. Determinants of success expectation included ability, control, and time. Prominent among these would be control. Many of the theories reviewed in the introduction to this thesis include explicitly and/or implicitly a concept of control (see also Syme, 1989; Skinner, 1996). Therefore it suggested that control perceptions should also play a prominent role in the goal setting theory/literature.

Not all the relationships specified in the model tested were supported by this research. In particular, there was little evidence to support the impact of support on success expectation. However, Locke and Latham (1990) suggest that support plays a prominent role in the goal setting process; therefore, (on the basis of these findings) one would be reluctant to disregard support's potential impact. The findings of this research did suggest that support might be an important antecedent of control (rather than success expectation), which is in line with Skinner, Wellborn, and Connell (1990); Connell and Wellborn (1990); and Skinner (1992) who suggested that the role of the social context is crucial in creating experiences of control. Thus, the model may need to be amended to reflect this (and other findings), which would result in a somewhat less parsimonious model but one that will probably more accurately reflect the complex relationships between goal dimensions and their impact on outcome variables.

In the main study, longitudinal panel analysis was completed on key relationships (see Chapter Four). This analysis suggested that there was no evidence (over a three month period) of any lagged effects. In addition, the test retest correlations (see Chapter Three) between the scales were moderate to low, suggesting that goal perceptions changed (again this was over the three month period). In the intervention study (see Chapter Five), participants rated their goal on the GPQ

approximately six weeks before they took their examination. A significant correlation was found between Success Expectation and goal achievement but none of the other scales showed any relationship with goal achievement. It was suggested that the reason why the other scales failed to produce any significant relationship with subsequent goal achievement was because goal perceptions may have changed substantially in the run up to the examination. These results support Austin and Vancouver's (1996) belief that goal perceptions are changeable. This has various implications. For example, goal perceptions probably should be elicited close to the outcome of interest if they are to be predictive. Additionally, if goal perceptions can change, then interventions such as motivational interviewing can be introduced and may be successful in changing key perceptions.

Although there were no significant differences in achievement levels or changes in goal perceptions between the two groups involved in the intervention study there were some interesting findings nonetheless. Notably success expectation was related to subsequent goal achievement, thus, supporting the importance of this dimension in the goal setting process in line Hollenbeck and Klein's (1987) model.

Applied Implications

The achievement of a particular goal may be important to the individual for a myriad of reasons not least as goals are often used by supervisors/managers in formal appraisal systems (in line with industrial standards such as Investors in People) and have repercussions for individuals' career, pay, and job security. The goal setting process can be the cause of stress. The cost to businesses of stress is substantial (see Karasek & Theorell, 1990). Therefore, the application of correct goal setting practices that maximises individual's commitment to their goal

whilst maximising positive affect and minimising negative affective responses is important.

Although the primary concern of future researchers may be to ensure that goals have a positive, rather than negative, effect on health and well-being, managers may be concerned more with the link between goal perceptions and performance. In the intervention study, individuals' goals for the module exam were compared with their examination score for that module, providing a measure of actual performance and goal achievement. Subsequent goal achievement (or failure to achieve) was then examined in light of previous perceptions. Perceptions of success expectation were predictive of whether or not individuals subsequently achieved their goals. If future research can provide further evidence that performance can be predicted by individual's responses to the GPQ (and that these perceptions can be changed), then managers etc. may recognise the importance and impact of their goal setting practices and be more willing to employ different strategies to help to ensure goal setting programmes are effective.

Once further research has been conducted to establish some norms for the key goal perceptions, the GPQ can be used to identify problem areas at individual, team or organisational level. Having identified any problems, improved practices in goal setting can be encouraged through training. If an individual is uncommitted or unhappy about a goal, it should be possible to trace this back to lack of value or lack of success expectation or both and in turn to the more distal determinants identified in this research. For example, if perceptions of origin (a major determinant of value) are low then managers should be encouraged to let individuals have a say in setting their own goals. In a series of studies, Sheldon and Elliot (1998) found that individuals were most likely to be effective when their goals engaged their natural interests or expressed their authentic

personal values. Perhaps by allowing individuals to set their own goals or at least participate in the process, it is more likely that goals will fulfil these criteria. Social cognitive theory (e.g., Bandura, 1997) would argue that choice in the absence of self-efficacy could lead to increased stress in that an individual may be faced with the need to cope with situations that they cannot handle (Locke and Latham, 1990). Locke and Latham (1990) suggested that help in developing action plans should mitigate the effects of stress. Therefore, if success expectation is low, then it may be appropriate to introduce some form of action planning, wherein managers and individuals explore ability perceptions and discuss strategies for achievement.

The aim of the intervention study was to change perceptions using a process based on Motivational Interviewing (e.g., Rollnick et al., 1999). The results of this study did suggest that such interventions might indeed be a useful strategy to employ to enhance critical goal perceptions (e.g., control). Of course, more research in needs to be carried out to support and extend the findings from that study.

Future Research Directions
Although the GPQ has been through a rigorous series of analysis and used in these series of studies there is still a need for further work before researchers can be confident that the questionnaire is valid and reliable. New items need to be written for some of the GPQ scales (see Chapter Three). Following revisions there will be a need to conduct studies to examine the validity of scales that contain the new items.

This research was conducted primarily in the workplace and therefore the GPQ needs to be administered in different contexts (e.g., sports) to ensure that the GPQ can be used as a generic scale. Norms for the scales should also be established in order to facilitate the evaluation of goals at

all levels e.g., individual, team, or organisational level.

This research supported existing goal theory, mostly with reference to Hollenbeck and Klein's (1987) model of the antecedents and consequences of goal commitment. However, more research is needed both in the workplace and in other contexts where the use of goal setting is widespread. Not all the dimensions measured within the GPQ were included in the model that was subsequently tested. Other dimensions such as perceived progress may prove to be key determinants of commitment, affect, and performance and need to be incorporated into the model. Indeed Klein et al. (1999) noted the lack of dimensions related to progress that have been included in previous research, whilst Austin and Vancouver (1996) highlighted the lack of inclusion in research of dimensions such as feedback and measurability. These dimensions are prominent in the more mechanistic theories that include the TOTE model (Miller, Galanter, & Pribram, 1960) such as control theory (see Klein, 1991a) and Locke and Latham's (1990) goal theory. It is suggested that efforts to include these dimensions in future models may be useful.

It is important to provide further evidence to support the link between the goal perceptions and actual goal achievement to strengthen the case for the importance (usefulness) of measuring goal perceptions. Some evidence was found to support the relationship between success expectation and subsequent goal achievement in the intervention study. As well as further research linking goal perceptions and performance there should also be research that explores the relationship between affects and performance. According to Pervin (1991), the primary motivational component is affect; therefore, how the individual feels about the goal may have more effect on subsequent performance than goal perceptions. Of course, there is still the problem of measuring goal

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performance to be addressed.

The majority of goal research has used goals that concentrated on encouraging quantity rather than quality (Austin & Bobko, 1985). Thus, the measurement of goal performance is often a simple process of counting the number of task completed. In the workplace objective measures of goal performance may be difficult to establish. Every individual can conceivably have a different goal, and goals may be complex and qualitative rather than quantitative. Borman (1991) and Longenecker and Ludwig (1995) highlight many of the problems with using subjective measures of performance. Thus, it is appreciated that many factors preclude the objective measure and confound the subjective measure of goal performance. However, future researchers may wish to address this problem.

In the intervention study there was evidence to suggest that key perceptions that influence actual performance could be altered (e.g., control). Further intervention studies perhaps using similar techniques to those employed in this research should be conducted to support these findings. Additionally, affects were not included in the intervention study. From the results of this research, it is suggested that a strategy such as action planning would lead to increases in success expectation and a subsequent decrease in negative affective responses to goals. It is suggested that intervention studies should be conducted to ascertain the effects on affects as well as goal perceptions of strategies such as action planning.

Overall, it is felt that considerable progress has been made in devising a questionnaire suitable for exploring the relationships between goal perceptions and outcome variables of interest. It is suggested that this research has contributed to the theoretical and applied knowledge base

with respect to goal theory, particularly at the applied or macro level. It is hoped that the findings of this research will be used to facilitate the evaluation of goal setting practices leading ultimately to improved goal setting practices.

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Appendix A
Questionnaire – Pilot Study

GOALS QUESTIONNAIRE

During your quarterly career development review (QCDR) you will have discussed specific goals or targets with your line manager. This questionnaire contains various statements which you might use to describe a specific goal or target. Below please state a particular goal which you are working on as a result of your QCDR. Then please read each statement carefully and circle the number which seems to best represent how you see the goal. There are no right or wrong answers and no trick questions. It is your views that interest us. Be assured that this is an anonymous questionnaire.

> 1 = Strongly disagree
>
> 2 = Disagree
>
> 3 = Neither agree nor disagree
>
> 4 = Agree
>
> 5 = Strongly agree

Please state your goal:

....

....

How long will this take (from start to finish)? ....

		Strongly disagree				Strongly agree
1.	It is important to others that I achieve this goal.	1	2	3	4	5
2.	This goal is of little consequence to me	1	2	3	4	5
3.	I will adjust this goal if necessary.	1	2	3	4	5
4.	I have to outdo others to achieve this goal.	1	2	3	4	5
5.	There are various means of achieving this goal.	1	2	3	4	5
6.	Other people hinder my progress towards this goal.	1	2	3	4	5

		Strongly disagree			Strongly agree	
7.	I set this goal for myself	1	2	3	4	5
8.	Several different strategies could be used to achieve this goal.	1	2	3	4	5
9.	This is a straightforward goal.	1	2	3	4	5
10.	This goal can be altered.	1	2	3	4	5
11.	This goal is precise.	1	2	3	4	5
12.	This goal is simple.	1	2	3	4	5
13.	It is difficult to split this goal into more manageable chunks.	1	2	3	4	5
14.	I feel incompetent with respect to this goal.	1	2	3	4	5
15.	To achieve this goal, I have to compete with others.	1	2	3	4	5
16.	I feel half-hearted about working towards this goal.	1	2	3	4	5
17.	This goal seems hard to divide into simpler tasks.	1	2	3	4	5
18.	There are various possible approaches to achieving this goal.	1	2	3	4	5
19.	Other people think this is a valuable goal.	1	2	3	4	5
20.	I feel unenthusiastic about this goal.	1	2	3	4	5
21.	This goal is unchallenging.	1	2	3	4	5
22.	I rely on others to do their part so that I can achieve this goal.	1	2	3	4	5
23.	I am kept advised of how I am doing on this goal.	1	2	3	4	5
24.	This goal is compatible with my other goals	1	2	3	4	5
25.	This goal can be changed.	1	2	3	4	5
26.	I enjoy working towards this goal.	1	2	3	4	5
27.	I doubt that I will achieve this goal.	1	2	3	4	5
28.	I chose to have this goal	1	2	3	4	5
29.	I have enough resources to achieve this goal	1	2	3	4	5

		Strongly disagree				Strongly agree
30.	I know when I am making headway towards this goal.	1	2	3	4	5
31.	If circumstances change I may well change this goal.	1	2	3	4	5
32.	I can see more than one method of achieving this goal.	1	2	3	4	5
33.	There is plenty of time to achieve this goal.	1	2	3	4	5
34.	Other people are aware that I have this goal.	1	2	3	4	5
35.	I feel indifferent about this goal.	1	2	3	4	5
36.	It is necessary to work with others to achieve this goal.	1	2	3	4	5
37.	There is insufficient time in which to achieve this goal.	1	2	3	4	5
38.	This goal is consistent with my other goals	1	2	3	4	5
39.	This goal might exceed my current abilities.	1	2	3	4	5
40.	If necessary I am prepared to alter this goal.	1	2	3	4	5
41.	This is an uncomplicated goal.	1	2	3	4	5
42.	I will need to strive hard to achieve this goal.	1	2	3	4	5
43.	I lack the necessary resources to attain this goal.	1	2	3	4	5
44.	I need others to do their bit so that I can attain this goal.	1	2	3	4	5
45.	I am determined to reach this goal.	1	2	3	4	5
46.	It matters to other people that I achieve this goal.	1	2	3	4	5
47.	I will have to invest a lot of effort to attain this goal.	1	2	3	4	5
48.	The timescale for this goal is reasonable.	1	2	3	4	5
49.	As regards this goal, I feel in command of the situation.	1	2	3	4	5
50.	This goal seems to contradict the purpose of my other goals.	1	2	3	4	5
51.	I can measure, step by step, my progress towards this goal.	1	2	3	4	5
52.	It is unlikely that I will achieve this goal.	1	2	3	4	5

		Strongly disagree				Strongly agree
53.	This goal can be adjusted.	1	2	3	4	5
54.	I have the necessary abilities to achieve this goal.	1	2	3	4	5
55.	This goal is important to me	1	2	3	4	5
56.	I have enough time in which to complete this goal.	1	2	3	4	5
57.	To achieve this goal I have to beat others.	1	2	3	4	5
58.	It is questionable that I will achieve this goal.	1	2	3	4	5
59.	This goal is unclear.	1	2	3	4	5
60.	I feel in control of this goal	1	2	3	4	5
61.	This goal requires teamwork.	1	2	3	4	5
62.	The deadline for completing this goal is unrealistic.	1	2	3	4	5
63.	This goal can be divided into smaller parts.	1	2	3	4	5
64.	Other people think this goal is of little consequence.	1	2	3	4	5
65.	I find it hard to see how this goal could be broken down.	1	2	3	4	5
66.	I have the skills needed to attain this goal.	1	2	3	4	5
67.	Others people are unconcerned whether I achieve this goal.	1	2	3	4	5
68.	I will have to work hard to attain this goal.	1	2	3	4	5
69.	This goal clashes with my other goals.	1	2	3	4	5
70.	I can break this goal down into sub-goals.	1	2	3	4	5
71.	I selected this goal.	1	2	3	4	5
72.	I have the necessary tools to achieve this goal	1	2	3	4	5
73.	I have people to encourage me with this goal.	1	2	3	4	5
74.	This goal is undemanding.	1	2	3	4	5
75.	This goal requires detailed planning.	1	2	3	4	5

		Strongly disagree				Strongly agree
76.	This goal was set for me.	1	2	3	4	5
77.	I get feedback on the progress I am making towards this goal.	1	2	3	4	5
78.	This is a worthwhile goal for me	1	2	3	4	5
79.	I have the necessary expertise to achieve this goal..	1	2	3	4	5
80.	This goal is best achieved by working with others.	1	2	3	4	5
81.	It is widely known that I have this goal.	1	2	3	4	5
82.	This goal is tedious.	1	2	3	4	5
83.	I am committed to this goal.	1	2	3	4	5
84.	It is no secret that I have this goal.	1	2	3	4	5
85.	My achieving this goal relies on others fulfilling their role.	1	2	3	4	5
86.	This goal is ambiguous.	1	2	3	4	5
87.	This goal is inflexible.	1	2	3	4	5
88.	It is difficult to know how far I have progressed towards this goal.	1	2	3	4	5
89.	Other people undermine my efforts to achieve this goal.	1	2	3	4	5
90.	This is a hard goal.	1	2	3	4	5
91.	This goal is unchangeable.	1	2	3	4	5
92.	I was pressurised into having this goal.	1	2	3	4	5
93.	I am kept informed about my progress towards this goal.	1	2	3	4	5
94.	Many people know that I have this goal.	1	2	3	4	5
95.	This goal is impossible to amend.	1	2	3	4	5
96.	Working towards this goal feels like a chore.	1	2	3	4	5
97.	If needs be I will alter this goal.	1	2	3	4	5
98.	I expect to achieve this goal.	1	2	3	4	5

		Strongly disagree			Strongly agree	
99.	Other people think this goal is trivial.	1	2	3	4	5
100.	This goal conflicts with some of my other goals.	1	2	3	4	5
101.	It is hard to know what stage I am at with this goal.	1	2	3	4	5
102.	This goal is easy.	1	2	3	4	5
103.	I fully intend to achieve this goal.	1	2	3	4	5
104.	I feel helpless in relation to this goal.	1	2	3	4	5
105.	This goal is difficult.	1	2	3	4	5
106.	To reach this goal I must do better than others.	1	2	3	4	5
107.	I get a lot of satisfaction out of pursuing this goal.	1	2	3	4	5
108.	There is a number of different paths to achieving this goal.	1	2	3	4	5
109.	I am prepared to amend this goal in the light of unforeseen events.	1	2	3	4	5
110.	This is a tough goal.	1	2	3	4	5
111.	As regards this goal, I feel I can really make things happen.	1	2	3	4	5
112.	I have a shortage of tools in respect to this goal	1	2	3	4	5
113.	I get a lot of support in pursuit of this goal.	1	2	3	4	5
114.	To me this goal is trivial.	1	2	3	4	5
115.	I feel inadequate with respect to this goal.	1	2	3	4	5
116.	If it proves necessary, I will revise this goal.	1	2	3	4	5
117.	This goal can be achieved in a number of ways.	1	2	3	4	5
118.	It is difficult to know how well I am doing in relation to this goal.	1	2	3	4	5
119.	People fail to tell me how I am progressing in relation to this goal.	1	2	3	4	5

		Strongly disagree			Strongly agree	
120.	Other people discourage me in relation to this goal.	1	2	3	4	5
121.	Pursuing this goal gives me a lot of pleasure.	1	2	3	4	5
122.	I will need to stretch myself to achieve this goal.	1	2	3	4	5
123.	The fact that I have this goal is common knowledge.	1	2	3	4	5
124.	I am inhibited by lack of materials to complete this goal.	1	2	3	4	5
125.	This goal is specific.	1	2	3	4	5
126.	I am kept in the picture about my progress towards this goal.	1	2	3	4	5
127.	I can tell how far I've come and how far I've got to go in order to achieve this goal.	1	2	3	4	5
128.	There is a good chance that I will achieve this goal.	1	2	3	4	5
129.	I will have to push myself to achieve this goal.	1	2	3	4	5
130.	This goal was imposed on me.	1	2	3	4	5
131.	I will be pushed for time to achieve this goal.	1	2	3	4	5
132.	This goal fits in well with my other goals	1	2	3	4	5
133.	This goal is clearly defined.	1	2	3	4	5
134.	This goal feels out of my control.	1	2	3	4	5
135.	This goal needs a good strategy.	1	2	3	4	5
136.	I will have to exert myself to achieve this goal.	1	2	3	4	5
137.	I have people to turn to for advice about this goal.	1	2	3	4	5
138.	I have sufficient materials to achieve this goal	1	2	3	4	5
139.	I feel powerless in relation to this goal.	1	2	3	4	5
140.	I have to outperform others to achieve this goal.	1	2	3	4	5
141.	This goal can be simplified by splitting it up.	1	2	3	4	5
142.	This is a complex goal.	1	2	3	4	5

		Strongly disagree				Strongly agree
143.	I dislike having to work towards this goal.	1	2	3	4	5
144.	I am kept in the dark about my progress towards this goal.	1	2	3	4	5
145.	This goal means little to me	1	2	3	4	5
146.	It is a public fact that I have this goal.	1	2	3	4	5
147.	This goal is vague.	1	2	3	4	5
148.	I value this goal.	1	2	3	4	5
149.	To achieve this goal my performance has to be superior to others.	1	2	3	4	5
150.	I am sure that I will achieve this goal.	1	2	3	4	5

Do you have any other comments about your goal?

....

....

....

....

....

Please, if happy to do so, give your:

Age _____ years

Gender Male / Female

Sincere thanks for your help. Please return this questionnaire in the envelope provided to:
Josephine Wray, Health and Human Performance, University of Wales, Ffriddoedd Building,
Victoria Drive, Bangor, LL57 2EN

Appendix B

Letter sent to all Link Employees (Pilot Study)

Health and Human Performance
University of Wales
Ffriddoedd Building
Victoria Drive
Bangor LL57 2EN

Telephone (01248) 382756
Fax (01248) 371053

18 April 1995

Dear Link Employee

I am writing to you to ask for your help. I am a postgraduate research student in the Division of Health and Human Performance, at the University of Wales, Bangor. My colleagues and I have a longstanding interest in work and health, and we are currently looking at the effect that individuals' goals have on their performance and well-being. It would assist us greatly in our research if you would complete the enclosed questionnaire.

LINK Training has kindly given us permission to approach you about this, but please note that this is a University and not a management project. Participation is voluntary. The questionnaires are anonymous and not numbered. The completed questionnaires will be seen only by us at the University. We will produce a general report for LINK, which may be of use in improving current practices as well as providing valuable evaluation for the Investors in People Award. The report will not identify any individual.

The questionnaire as it stands is long and may seem somewhat repetitive. This is because it is in the development stage. Please bear with us. The reason for asking a number of apparently similar questions is not to catch anyone out but simply to identify the best questions for future use. In other words, you are helping with the development of what should be a useful tool. There are no right or wrong answers. Please just tell us what you think.

We would appreciate questionnaires being returned, via the external mail, by Friday 12th May. If you require any further information or have any comments please do not hesitate to write, fax or phone me at the above address. Thank you for your help.

Yours faithfully

Josephine Wray

Appendix C
Single and Paired Confirmatory Factor Analysis for Pilot Study

	χ^2	d.f.	p (χ^2)	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Single Factor Models									
Ability	4.97	2	0.08	0.05	0.98	0.94	0.12	0.14	
Complexity	10.31	5	0.07	0.06	0.96	0.94	0.10	0.15	
Competition	2.89	5	0.72	0.01	0.99	1.00	0.00	0.82	
Commitment	7.15	2	0.03	0.11	0.95	0.82	0.16	0.06	
Conflict	10.33	5	0.07	0.04	0.97	0.98	0.10	0.15	
Control	1.76	5	0.88	0.02	0.99	1.00	0.00	0.93	
Difficulty	10.41	5	0.06	0.05	0.96	0.98	0.10	0.14	
Divisibility	5.78	5	0.33	0.03	0.98	1.00	0.04	0.48	
Effort	1.90	2	0.39	0.02	0.99	1.00	0.00	0.48	
Enjoyment	10.07	5	0.07	0.03	0.96	0.98	0.10	0.16	
Feedback	13.35	9	0.15	0.03	0.96	0.99	0.07	0.31	
Fixedness	0.36	2	0.84	0.01	1.00	1.00	0.00	0.87	
Flexibility	10.64	5	0.06	0.03	0.96	0.98	0.10	0.14	
Importance to Others	4.11	2	0.13	0.04	0.98	0.97	0.10	0.20	
Measurability	5.39	5	0.37	0.03	0.98	1.00	0.03	0.52	
Origin	2.31	2	0.32	0.02	0.99	1.00	0.04	0.41	
Options	10.02	9	0.35	0.03	0.97	1.00	0.03	0.55	
Publicness	16.83	9	0.05	0.03	0.95	0.99	0.09	0.15	
Support	17.34	9	0.04	0.06	0.95	0.94	0.09	0.13	
Success Expectation	12.43	5	0.03	0.03	0.95	0.98	0.12	0.08	
Time	10.80	5	0.06	0.04	0.96	0.98	0.10	0.13	
Tools	19.23	9	0.02	0.03	0.94	0.97	0.10	0.09	
Teamwork	0.15	2	0.93	0.01	1.00	1.00	0.0	0.94	
Paired Scales									
Ability+Complexity	39.65	26	0.04	0.08	0.93	0.91	0.07	0.21	0.39(0.12)
Ability+Competition	45.16	26	0.01	0.07	0.91	0.96	0.08	0.09	0.34(0.11)

	χ^2	d.f.	$p(\chi^2)$	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Ability+Commitment	25.32	13	0.02	0.08	0.94	0.88	0.09	0.09	0.54(0.12)
Ability+Conflict	55.68	26	0.00	0.08	0.90	0.92	0.10	0.01	0.64(0.09)*
Ability+Control	55.18	26	0.00	0.07	0.90	0.91	0.10	0.02	0.95(0.07)*
Ability+Difficulty	44.44	26	0.01	0.07	0.92	0.95	0.08	0.11	0.27(0.12)
Ability+Divisibility	40.88	26	0.03	0.07	0.92	0.95	0.07	0.18	-0.07(0.12)
Ability+Effort	34.20	19	0.02	0.07	0.93	0.96	0.09	0.10	0.19(0.12)
Ability+Enjoyment	77.65	26	0.00	0.09	0.88	0.87	0.14	0.00	-0.47(0.10)*
Ability+Feedback	67.20	34	0.00	0.12	0.90	0.93	0.10	0.02	-0.15(0.27)*
Ability+Fixedness	50.61	19	0.00	0.10	0.90	0.89	0.12	0.00	0.01(0.12)*
Ability+Flexibility	44.70	26	0.01	0.07	0.92	0.94	0.08	0.10	-0.01(0.12)
Ability+Importance to Others	31.88	19	0.03	0.08	0.94	0.90	0.08	0.15	0.13(0.13)
Ability+Measurability	67.38	26	0.00	0.12	0.89	0.88	0.12	0.00	0.29(0.15)*
Ability+Origin	37.52	19	0.01	0.08	0.92	0.94	0.10	0.05	-0.42(0.11)
Ability+Options	54.94	34	0.01	0.06	0.91	0.95	0.08	0.13	0.03(0.12)
Ability+Publicness	58.16	34	0.01	0.10	0.91	0.96	0.08	0.08	-0.18(0.12)
Ability+Support	57.06	34	0.01	0.08	0.91	0.89	0.08	0.10	-0.47(0.10)
Ability+Success Expectation	54.98	26	0.00	0.06	0.90	0.93	0.10	0.02	0.72(0.08)*
Ability+Time	53.86	26	0.00	0.07	0.91	0.92	0.10	0.02	0.55(0.10)*
Ability+Tools	70.16	34	0.00	0.07	0.88	0.92	0.10	0.01	0.50(0.10)*
Ability+Teamwork	23.94	19	0.20	0.06	0.95	0.98	0.05	0.47	0.38(0.11)
Complexity+Competition	57.59	34	0.01	0.07	0.90	0.96	0.08	0.09	0.41(0.10)
Complexity+Commitment	34.62	19	0.02	0.08	0.92	0.88	0.09	0.09	-0.09(0.14)
Complexity+Conflict	40.19	34	0.21	0.07	0.93	0.98	0.04	0.58	0.18(0.11)
Complexity+Control	62.17	34	0.00	0.09	0.90	0.91	0.09	0.04	-0.43(0.10)*
Complexity+Difficulty	44.58	34	0.11	0.06	0.92	0.98	0.05	0.41	0.86(0.05)
Complexity+Divisibility	47.12	34	0.07	0.09	0.92	0.96	0.06	0.32	0.15(0.12)
Complexity+Effort	38.31	26	0.06	0.06	0.93	0.97	0.07	0.26	0.75(0.06)
Complexity+Enjoyment	65.71	34	0.00	0.09	0.89	0.92	0.09	0.02	0.08(0.12)*
Complexity+Feedback	72.55	43	0.00	0.09	0.89	0.93	0.08	0.07	0.12(0.12)
Complexity+Fixedness	41.95	26	0.03	0.08	0.92	0.95	0.08	0.16	-0.06(0.12)

	χ^2	d.f.	$p(\chi^2)$	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Complexity+Flexibility	39.05	34	0.25	0.05	0.93	0.99	0.04	0.61	-0.09(0.12)
Complexity+Importance to Others	41.80	26	0.03	0.08	0.92	0.91	0.08	0.16	-0.13(0.13)
Complexity+Measurability	66.99	34	0.00	0.10	0.89	0.91	0.10	0.02	0.04(0.12)*
Complexity+Origin	45.07	26	0.01	0.06	0.92	0.95	0.08	0.10	0.39(0.10)
Complexity+Options	62.38	43	0.03	0.08	0.91	0.96	0.07	0.23	0.25(0.11)
Complexity+Publicness	55.06	43	0.10	0.08	0.91	0.98	0.05	0.45	0.33(0.11)
Complexity+Support	75.31	43	0.00	0.09	0.89	0.87	0.08	0.04	-0.21(0.12)*
Complexity+Success Expectation	51.34	34	0.03	0.06	0.92	0.96	0.07	0.20	0.40(0.10)
Complexity+Time	59.70	34	0.00	0.07	0.90	0.93	0.08	0.06	0.46(0.10)
Complexity+Tools	62.30	43	0.03	0.06	0.90	0.96	0.07	0.24	-0.48(0.10)
Complexity+Teamwork	42.79	26	0.02	0.07	0.92	0.95	0.08	0.14	0.55(0.09)
Competition+Commitment	21.29	19	0.32	0.05	0.95	1.00	0.03	0.61	0.00(0.12)
Competition+Conflict	44.39	34	0.11	0.07	0.92	0.99	0.05	0.42	0.05(0.10)
Competition+Control	24.64	34	0.88	0.08	0.96	1.00	0.00	0.98	-0.27(0.10)
Competition+Difficulty	50.07	34	0.04	0.06	0.92	0.98	0.07	0.23	0.53(0.08)
Competition+Divisibility	29.68	34	0.68	0.04	0.95	1.00	0.00	0.92	-0.15(0.10)
Competition+Effort	21.68	26	0.71	0.04	0.96	1.00	0.00	0.91	0.53(0.07)
Competition+Enjoyment	65.59	34	0.00	0.06	0.89	0.96	0.09	0.02	0.08(0.10)*
Competition+Feedback	53.12	43	0.14	0.07	0.92	0.99	0.05	0.52	0.05(0.10)
Competition+Fixedness	33.91	26	0.14	0.05	0.94	0.99	0.05	0.42	0.13(0.10)
Competition+Flexibility	45.75	34	0.09	0.04	0.92	0.98	0.06	0.35	-0.02(0.11)
Competition+Importance to Others	22.08	26	0.68	0.05	0.96	1.00	0.00	0.90	0.18(0.11)
Competition+Measurability	47.70	34	0.06	0.06	0.92	0.98	0.06	0.30	0.13(0.10)
Competition+Origin	35.56	26	0.10	0.04	0.94	0.99	0.06	0.36	0.01(0.10)
Competition+Options	76.29	43	0.00	0.06	0.90	0.96	0.09	0.04	0.12(0.10)*
Competition+Publicness	54.83	43	0.11	0.07	0.92	0.98	0.05	0.46	-0.08(0.10)
Competition+Support	63.72	43	0.02	0.08	0.90	0.96	0.07	0.20	-0.22(0.11)
Competition+Success Expectation	70.20	43	0.01	0.06	0.89	0.97	0.08	0.09	0.32(0.09)
Competition+Time	48.30	34	0.05	0.06	0.91	0.98	0.06	0.28	0.31(0.10)
Competition+Tools	52.93	43	0.14	0.06	0.92	0.99	0.05	0.53	-0.16(0.10)

	χ^2	d.f.	$p(\chi^2)$	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Competition+Teamwork	25.02	26	0.52	0.07	0.95	1.00	0.00	0.81	0.30(0.10)
Commitment+Conflict	26.70	19	0.11	0.06	0.94	0.98	0.06	0.33	0.58(0.10)
Commitment+Control	40.68	19	0.00	0.11	0.92	0.92	0.10	0.03	-0.46(0.11)*
Commitment+Difficulty	35.14	19	0.01	0.08	0.92	0.95	0.09	0.09	-0.10(0.12)
Commitment+Divisibility	15.37	19	0.70	0.04	0.96	1.00	0.00	0.89	-0.02(0.13)
Commitment+Effort	10.46	13	0.66	0.05	0.97	1.00	0.00	0.83	-0.17(0.11)
Commitment+Enjoyment	46.65	19	0.00	0.07	0.90	0.93	0.12	0.01	-0.84(0.09)*
Commitment+Feedback	34.35	26	0.13	0.06	0.94	0.98	0.06	0.40	-0.14(0.12)
Commitment+Fixedness	15.66	13	0.27	0.07	0.96	0.99	0.04	0.50	0.18(0.12)
Commitment+Flexibility	30.02	19	0.05	0.06	0.93	0.97	0.08	0.19	0.11(0.12)
Commitment+Importance to Others	21.40	13	0.07	0.07	0.95	0.92	0.08	0.20	0.08(0.14)
Commitment+Measurability	10.22	19	0.95	0.03	0.98	1.00.	0.00	0.99	0.16(0.12)
Commitment+Origin	25.88	13	0.02	0.09	0.94	0.96	0.10	0.08	-0.34(0.11)
Commitment+Options	36.22	26	0.09	0.05	0.94	0.98	0.06	0.33	-0.11(0.12)
Commitment+Publicness	35.29	26	0.11	0.05	0.94	0.98	0.06	0.37	0.08(0.12)
Commitment+Support	32.48	26	0.18	0.07	0.94	0.96	0.05	0.48	-0.09(0.13)
Commitment+Success Expectation	30.14	19	0.05	0.09	0.93	0.97	0.07	0.20	0.40(0.11)
Commitment+Time	24.76	19	0.17	0.08	0.94	0.98	0.05	0.42	0.29(0.12)
Commitment+Tools	38.62	26	0.05	0.06	0.92	0.97	0.07	0.25	-0.06(0.12)
Commitment+Teamwork	9.75	13	0.71	0.05	0.98	1.00	0.00	0.87	0.03(0.12)
Conflict+Control	54.23	34	0.02	0.08	0.91	0.96	0.08	0.14	0.60(0.07)
Conflict+Difficulty	64.15	34	0.00	0.09	0.90	0.95	0.09	0.03	0.14(0.10)*
Conflict+Divisibility	52.44	34	0.02	0.06	0.92	0.96	0.07	0.18	-0.31(0.10)
Conflict+Effort	35.16	26	0.11	0.06	0.94	0.98	0.06	0.37	-0.01(0.10)
Conflict+Enjoyment	74.91	34	0.00	0.07	0.88	0.94	0.11	0.00	-0.64(0.07)*
Conflict+Feedback	57.43	43	0.07	0.05	0.92	0.98	0.06	0.38	-0.26(0.10)
Conflict+Fixedness	37.33	26	0.07	0.10	0.93	0.98	0.06	0.29	-0.13(0.10)
Conflict+Flexibility	47.78	34	0.06	0.05	0.92	0.97	0.06	0.29	-0.06(0.11)
Conflict+Importance to Others	45.79	26	0.01	0.09	0.91	0.95	0.08	0.09	0.27(0.11)
Conflict+Measurability	39.49	34	0.24	0.05	0.93	0.99	0.04	0.62	0.32(0.10)

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	χ^2	d.f.	$p(\chi^2)$	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Conflict+Origin	33.45	26	0.15	0.06	0.94	0.99	0.05	0.45	-0.53(0.08)
Conflict+Options	56.21	43	0.09	0.06	0.92	0.98	0.05	0.41	-0.15(0.10)
Conflict+Publicness	65.27	43	0.02	0.05	0.91	0.97	0.07	0.17	0.03(0.10)
Conflict+Support	62.60	43	0.03	0.07	0.91	0.96	0.07	0.23	0.44(0.09)
Conflict+Success Expectation	54.98	34	0.01	0.05	0.91	0.97	0.08	0.13	0.55(0.08)
Conflict+Time	45.86	34	0.08	0.05	0.92	0.98	0.06	0.37	0.59(0.07)
Conflict+Tools	56.62	43	0.08	0.06	0.92	0.98	0.05	0.41	0.36(0.09)
Conflict+Teamwork	29.60	26	0.28	0.06	0.94	0.99	0.04	0.62	0.17(0.10)
Control+Difficulty	63.25	34	0.00	0.11	0.89	0.95	0.09	0.04	-0.38(0.09)*
Control+Divisibility	44.78	34	0.10	0.07	0.93	0.98	0.05	0.41	0.04(0.11)
Control+Effort	59.66	26	0.20	0.04	0.95	0.99	0.05	0.47	0.18(0.10)
Control+Enjoyment	99.75	34	0.00	0.10	0.85	0.89	0.13	0.00	0.69(0.06)*
Control+Feedback	51.45	43	0.18	0.08	0.92	0.99	0.04	0.58	0.23(0.10)
Control+Fixedness	52.29	26	0.00	0.11	0.91	0.94	0.10	0.06	0.18(0.10)
Control+Flexibility	46.91	34	0.07	0.06	0.92	0.97	0.06	0.06	0.27(0.10)
Control+Importance to Others	51.15	26	0.00	0.08	0.92	0.92	0.10	0.03	-0.15(0.12)*
Control+Measurability	39.86	34	0.23	0.07	0.94	0.99	0.04	0.60	-0.24(0.10)
Control+Origin	48.24	26	0.01	0.06	0.92	0.96	0.09	0.06	0.63(0.07)
Control+Options	59.33	43	0.05	0.09	0.91	0.97	0.06	0.32	0.13(0.11)
Control+Publicness	47.46	43	0.30	0.06	0.93	0.99	0.03	0.72	-0.11(0.10)
Control+Support	64.57	43	0.02	0.08	0.90	0.94	0.07	0.19	0.54(0.09)
Control+Success Expectation	42.24	34	0.16	0.04	0.93	0.99	0.05	0.51	-0.80(0.05)
Control+Time	40.21	34	0.21	0.04	0.93	0.99	0.04	0.58	-0.78(0.05)
Control+Tools	53.52	43	0.13	0.05	0.92	0.98	0.05	0.51	0.56(0.08)
Control+Teamwork	38.20	26	0.06	0.08	0.93	0.97	0.07	0.26	-0.32(0.10)
Difficulty+Divisibility	44.06	34	0.12	0.07	0.92	0.98	0.05	0.44	-0.11(0.11)
Difficulty+Effort	57.24	26	0.00	0.06	0.90	0.96	0.11	0.01	0.83(0.04)*
Difficulty+Enjoyment	83.32	34	0.00	0.11	0.86	0.92	0.12	0.00	0.01(0.11)*
Difficulty+Feedback	96.56	43	0.00	0.09	0.86	0.93	0.11	0.00	0.13(0.10)*
Difficulty+Fixedness	44.48	26	0.01	0.09	0.92	0.97	0.08	0.11	-0.28(0.10)

	χ^2	d.f.	$p(\chi^2)$	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Difficulty+Flexibility	46.09	34	0.08	0.05	0.92	0.98	0.06	0.34	-0.38(0.09)
Difficulty+Importance to Others	51.25	26	0.00	0.08	0.90	0.94	0.10	0.03	-0.11(0.12)*
Difficulty+Measurability	38.39	34	0.28	0.05	0.93	0.99	0.04	0.66	0.04(0.11)
Difficulty+Origin	47.36	26	0.01	0.07	0.91	0.96	0.09	0.07	-0.25(0.10)
Difficulty+Options	54.33	34	0.02	0.07	0.91	0.97	0.08	0.14	0.18(0.10)
Difficulty+Publicness	77.37	43	0.00	0.06	0.89	0.96	0.09	0.03	0.27(0.10)*
Difficulty+Support	63.38	43	0.02	0.09	0.90	0.96	0.07	0.21	0.26(0.11)
Difficulty+Success Expectation	60.12	34	0.00	0.08	0.90	0.96	0.08	0.06	0.47(0.08)
Difficulty+Time	84.17	34	0.00	0.08	0.87	0.92	0.12	0.00	0.50(0.08)*
Difficulty+Tools	60.47	43	0.04	0.05	0.91	0.97	0.06	0.29	0.45(0.09)
Difficulty+Teamwork	35.20	26	0.11	0.06	0.93	0.98	0.06	0.37	0.61(0.07)
Divisibility+Effort	23.88	26	0.58	0.05	0.95	1.00	0.00	0.85	-0.01(0.11)
Divisibility+Enjoyment	37.92	34	0.30	0.05	0.94	0.99	0.03	0.68	0.11(0.11)
Divisibility+Feedback	59.70	43	0.05	0.06	0.91	0.97	0.06	0.31	0.21(0.10)
Divisibility+Fixedness	24.25	26	0.56	0.04	0.95	1.00	0.00	0.84	0.25(0.10)
Divisibility+Flexibility	45.23	34	0.09	0.04	0.93	0.98	0.06	0.37	0.28(0.10)
Divisibility+Importance to Others	26.12	26	0.46	0.06	0.95	1.00	0.01	0.77	-0.09(0.12)
Divisibility+Measurability	64.11	34	0.00	0.07	0.89	0.94	0.09	0.03	-0.34(0.10)*
Divisibility+Origin	28.14	26	0.35	0.06	0.94	1.00	0.03	0.69	-0.15(0.10)
Divisibility+Options	53.58	43	0.13	0.06	0.91	0.98	0.05	0.50	0.60(0.07)
Divisibility+Publicness	57.73	43	0.07	0.05	0.91	0.98	0.06	0.37	0.13(0.10)
Divisibility+Support	53.18	43	0.14	0.07	0.92	0.97	0.05	0.52	0.22(0.11)
Divisibility+Success Expectation	48.76	34	0.05	0.07	0.92	0.97	0.06	0.27	0.00(0.11)
Divisibility+Time	54.37	34	0.02	0.08	0.91	0.96	0.08	0.14	-0.17(0.11)
Divisibility+Tools	44.35	43	0.41	0.06	0.93	1.00	0.02	0.81	0.03(0.11)
Divisibility+Teamwork	25.37	26	0.50	0.04	0.95	1.00	0.00	0.80	0.26(0.10)
Effort+Enjoyment	54.56	26	0.00	0.09	0.90	0.95	0.10	0.01	0.28(0.10)*
Effort+Feedback	50.13	34	0.04	0.07	0.92	0.98	0.07	0.23	0.29(0.09)
Effort+Fixedness	32.23	19	0.03	0.04	0.94	0.98	0.08	0.14	-0.07(0.10)
Effort+Flexibility	27.07	26	0.41	0.05	0.94	1.00	0.02	0.72	-0.16(0.10)

	χ^2	d.f.	$p\,(\chi^2)$	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Effort+Importance to Others	25.70	19	0.14	0.06	0.95	0.98	0.06	0.38	-0.03(0.11)
Effort+Measurability	35.58	26	0.10	0.06	0.94	0.98	0.06	0.36	-0.04(0.10)
Effort+Origin	33.12	19	0.02	0.06	0.93	0.98	0.08	0.12	-0.04(0.10)
Effort+Options	44.73	34	0.10	0.06	0.92	0.98	0.05	0.41	0.27(0.10)
Effort+Publicness	54.42	34	0.02	0.04	0.92	0.98	0.08	0.14	0.17(0.10)
Effort+Support	43.77	34	0.12	0.09	0.93	0.98	0.05	0.44	0.00(0.11)
Effort+Success Expectation	31.16	26	0.22	0.05	0.94	0.99	0.04	0.55	0.26(0.10)
Effort+Time	50.73	26	0.00	0.09	0.91	0.96	0.09	0.04	0.29(0.10)*
Effort+Tools	54.93	34	0.01	0.05	0.91	0.97	0.08	0.13	0.17(0.10)
Effort+Teamwork	36.36	19	0.01	0.07	0.92	0.97	0.09	0.07	0.40(0.09)
Enjoyment+Feedback	63.56	43	0.02	0.06	0.90	0.97	0.07	0.21	0.26(0.10)
Enjoyment+Fixedness	64.98	26	0.00	0.12	0.89	0.93	0.12	0.00	0.10(0.11)*
Enjoyment+Flexibility	53.66	34	0.02	0.07	0.91	0.96	0.08	0.14	0.12(0.11)
Enjoyment+Importance to Others	50.58	26	0.00	0.09	0.91	0.94	0.09	0.04	-0.04(0.12)*
Enjoyment+Measurability	40.63	34	0.20	0.05	0.93	0.99	0.04	0.57	-0.20(0.10)
Enjoyment+Origin	37.75	26	0.06	0.07	0.92	0.98	0.07	0.28	0.55(0.08)
Enjoyment+Options	67.81	43	0.01	0.05	0.90	0.96	0.07	0.13	0.24(0.10)
Enjoyment+Publicness	63.43	43	0.02	0.06	0.91	0.98	0.07	0.21	-0.13(0.10)
Enjoyment+Support	69.54	43	0.01	0.06	0.89	0.94	0.08	0.10	0.34(0.10)
Enjoyment+Success Expectation	50.91	34	0.03	0.05	0.91	0.97	0.07	0.21	-0.53(0.08)
Enjoyment+Time	49.94	34	0.04	0.06	0.91	0.97	0.07	0.24	-0.50(0.08)
Enjoyment+Tools	64.32	43	0.02	0.06	0.90	0.97	0.07	0.19	0.22(0.10)
Enjoyment+Teamwork	52.54	26	0.00	0.08	0.90	0.95	0.10	0.03	-0.10(0.11)*
Feedback+Fixedness	48.36	34	0.05	0.08	0.92	0.98	0.06	0.28	0.04(0.10)
Feedback+Flexibility	49.40	43	0.23	0.06	0.92	0.99	0.04	0.63	0.24(0.10)
Feedback+Importance to Others	41.14	34	0.19	0.05	0.93	0.99	0.04	0.55	-0.43(0.10)
Feedback+Measurability	70.94	43	0.00	0.05	0.89	0.96	0.08	0.08	-0.82(0.04)
Feedback+Origin	53.83	34	0.02	0.07	0.92	0.97	0.07	0.15	0.02(0.10)
Feedback+Options	29.94	34	0.67	0.04	0.95	1.00	0.00	0.91	0.36(0.09)
Feedback+Publicness	85.11	53	0.00	0.07	0.89	0.97	0.08	0.09	0.39(0.09)

|	χ^2	d.f.	p (χ^2)	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Feedback+Support	93.13	53	0.00	0.07	0.88	0.94	0.09	0.03	0.79(0.05)*
Feedback+Success Expectation	72.71	43	0.00	0.09	0.89	0.96	0.08	0.07	-0.15(0.10)
Feedback+Time	70.24	43	0.01	0.08	0.90	0.96	0.08	0.09	-0.33(0.10)
Feedback+Tools	77.63	53	0.02	0.07	0.90	0.97	0.07	0.20	0.34(0.09)
Feedback+Teamwork	63.40	34	0.00	0.08	0.90	0.96	0.09	0.03	0.17(0.10)*
Fixedness+Flexibility	54.43	26	0.00	0.05	0.90	0.95	0.10	0.02	0.91(0.03)*
Fixedness+Importance to Others	13.32	19	0.82	0.05	0.97	1.00	0.00	0.94	0.27(0.11)
Fixedness+Measurability	38.55	26	0.05	0.07	0.93	0.97	0.07	0.25	-0.04(0.11)
Fixedness+Origin	35.00	19	0.01	0.11	0.93	0.97	0.09	0.09	0.27(0.10)
Fixedness+Options	29.94	34	0.67	0.04	0.95	1.00	0.00	0.91	0.36(0.09)
Fixedness+Publicness	45.15	34	0.10	0.06	0.93	0.99	0.06	0.39	-0.18(0.10)
Fixedness+Support	60.82	34	0.00	0.10	0.90	0.93	0.09	0.05	0.25(0.11)
Fixedness+Success Expectation	57.08	26	0.00	0.11	0.90	0.95	0.11	0.01	-0.12(0.10)*
Fixedness+Time	82.30	26	0.00	0.13	0.86	0.89	0.14	0.00	-0.30(0.10)*
Fixedness+Tools	49.44	34	0.04	0.07	0.92	0.97	0.07	0.25	0.13(0.10)
Fixedness+Teamwork	34.44	19	0.02	0.08	0.94	0.97	0.09	0.10	-0.15(0.10)
Flexibility+Importance to Others	26.68	26	0.43	0.04	0.94	1.00	0.02	0.73	0.10(0.12)
Flexibility+Measurability	38.07	34	0.29	0.04	0.93	0.99	0.03	0.65	-0.22(0.11)
Flexibility+Origin	48.84	26	0.00	0.08	0.90	0.96	0.09	0.05	0.24(0.10)
Flexibility+Options	60.04	43	0.04	0.06	0.91	0.97	0.06	0.28	0.34(0.10)
Flexibility+Publicness	64.74	43	0.02	0.07	0.90	0.97	0.07	0.17	-0.13(0.11)
Flexibility+Support	62.84	43	0.03	0.08	0.90	0.95	0.07	0.21	0.41(0.10)
Flexibility+Success Expectation	60.78	34	0.00	0.06	0.89	0.96	0.09	0.05	-0.19(0.11)
Flexibility+Time	72.84	34	0.00	0.08	0.88	0.93	0.11	0.01	-0.40(0.10)*
Flexibility+Tools	68.81	43	0.01	0.07	0.91	0.96	0.08	0.10	0.25(0.10)
Flexibility+Teamwork	36.35	26	0.09	0.05	0.92	0.98	0.06	0.31	-0.19(0.11)
Importance to Others+Measurability	40.81	26	0.03	0.06	0.92	0.96	0.07	0.18	0.44(0.10)
Importance to Others+Origin	37.22	19	0.01	0.10	0.92	0.95	0.09	0.06	0.15(0.11)
Importance to Others+Options	49.83	34	0.04	0.07	0.92	0.97	0.07	0.24	0.08(0.12)

	χ^2	d.f.	p (χ^2)	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Importance to Others+Publicness	46.84	34	0.07	0.08	0.92	0.98	0.06	0.34	-0.49(0.09)
Importance to Others+Support	57.35	34	0.01	0.09	0.90	0.91	0.08	0.09	0.54(0.10)
Importance to Others+Success Expectation	45.08	26	0.01	0.06	0.92	0.95	0.08	0.10	0.01(0.12)
Importance to Others+Time	39.78	26	0.04	0.07	0.93	0.96	0.07	0.21	0.11(0.12)
Importance to Others+Tools	40.44	34	0.21	0.05	0.93	0.98	0.04	0.58	0.17(0.11)
Importance to Others+Teamwork	22.97	19	0.24	0.09	0.95	0.99	0.04	0.52	-0.05(0.12)
Measurability+Origin	29.62	26	0.28	0.05	0.94	0.99	0.04	0.62	0.02(0.11)
Measurability+Options	65.64	43	0.01	0.07	0.91	0.97	0.07	0.16	-0.19(0.10)
Measurability+Publicness	80.65	43	0.00	0.06	0.89	0.95	0.09	0.02	-0.40(0.09)*
Measurability+Support	56.46	43	0.08	0.06	0.92	0.97	0.05	0.41	0.68(0.07)
Measurability+Success Expectation	46.80	34	0.07	0.05	0.92	0.98	0.06	0.34	0.19(0.10)
Measurability+Time	53.39	34	0.01	0.07	0.92	0.96	0.07	0.16	0.33(0.10)
Measurability+Tools	55.01	43	0.10	0.04	0.92	0.98	0.05	0.46	0.27(0.10)
Measurability+Teamwork	34.28	26	0.13	0.07	0.94	0.98	0.06	0.41	-0.13(0.11)
Origin+Options	39.41	34	0.24	0.05	0.93	0.99	0.04	0.62	0.13(0.10)
Origin+Publicness	49.33	34	0.04	0.06	0.92	0.98	0.07	0.26	-0.40(0.09)
Origin+Support	47.47	34	0.06	0.08	0.93	0.97	0.06	0.31	0.29(0.10)
Origin+Success Expectation	59.80	26	0.00	0.07	0.88	0.95	0.11	0.01	-0.55(0.08)*
Origin+Time	33.05	26	0.16	0.05	0.94	0.99	0.05	0.46	-0.62(0.07)
Origin+Tools	48.92	34	0.05	0.06	0.92	0.98	0.06	0.27	0.38(0.09)
Origin+Teamwork	15.11	19	0.72	0.04	0.97	1.00	0.00	0.89	-0.37(0.09)
Options+Publicness	64.29	53	0.14	0.05	0.92	0.99	0.05	0.57	0.05(0.10)
Options+Support	77.12	53	0.02	0.07	0.90	0.95	0.07	0.21	0.19(0.11)
Options+Success Expectation	52.64	43	0.15	0.05	0.91	0.99	0.05	0.54	0.00(0.11)
Options+Time	62.43	43	0.03	0.07	0.90	0.97	0.07	0.23	-0.27(0.10)
Options+Tools	54.48	53	0.42	0.04	0.92	1.00	0.02	0.84	0.01(0.11)
Options+Teamwork	34.43	34	0.45	0.05	0.94	1.00	0.01	0.79	0.35(0.09)
Publicness+Support	97.05	53	0.00	0.08	0.89	0.94	0.09	0.02	0.20(0.11)*
Publicness+Success Expectation	69.73	43	0.01	0.06	0.90	0.97	0.08	0.10	0.23(0.10)

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	χ^2	d.f.	p (χ^2)	SRMR	GFI	CFI	RMSEA	p RMSEA <0.5	Correlation (SE)
Publicness+Time	64.06	43	0.02	0.05	0.91	0.97	0.07	0.20	0.20(0.10)
Publicness+Tools	77.06	53	0.02	0.05	0.90	0.97	0.07	0.21	-0.11(0.10)
Publicness+Teamwork	42.11	34	0.16	0.05	0.93	0.99	0.05	0.51	0.28(0.10)
Support+Success Expectation	57.11	43	0.07	0.06	0.91	0.97	0.06	0.39	0.46(0.09)
Support+Time	74.41	43	0.00	0.08	0.89	0.93	0.08	0.05	0.75(0.06)
Support+Tools	84.36	53	0.00	0.06	0.89	0.94	0.07	0.10	0.70(0.07)
Support+Teamwork	49.14	34	0.05	0.08	0.92	0.96	0.07	0.26	-0.14(0.11)
Success Expectation+Time	50.27	34	0.04	0.05	0.91	0.97	0.07	0.23	0.71(0.06)
Success Expectation+Tools	71.65	43	0.00	0.07	0.89	0.96	0.08	0.08	0.44(0.09)
Success Expectation+Teamwork	39.69	26	0.04	0.05	0.92	0.98	0.07	0.21	0.37(0.09)
Time+Tools	67.44	43	0.01	0.05	0.90	0.96	0.07	0.13	0.65(0.07)
Time+Teamwork	50.32	26	0.00	0.07	0.91	0.95	0.09	0.04	0.35(0.10)*
Tools+Teamwork	49.48	34	0.04	0.05	0.91	0.97	0.07	0.25	0.42(0.09)

Note: RMSEA = Root Mean Square Error of Approximation; GFI = Goodness of Fit Index; CFI = Comparative Fit Index; SE = Standard error.
*These models did not fit adequately

Appendix D
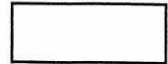
Questionnaire – Main Study

Goals Questionniare

Often we find ourselves with particular goals or targets to achieve at work. Goals are often set as part of an appraisal process or in response to a particular team, departmental or company project or initiative. Please think of a goal that you currently have which is to do with your work. This questionnaire contains various statements which you might use to describe a goal or target. Read each statement carefully and circle the number which seems to best represent how you see the goal. There are no right or wrong answers and no trick questions. It is your views that interest us. Please be assured that this is a confidential questionnaire.

1 = Strongly disagree
2 = Disagree
3 = Neither agree nor disagree
4 = Agree
5 = Strongly agree

Please state your goal...

....

....

What is the date by which this goal should be achieved?..

How long will it have taken altogether (from start to finish)? ....

		Strongly disagree				Strongly agree
1.	This goal can be altered.	1	2	3	4	5
2.	The fact that I have this goal is common knowledge.	1	2	3	4	5
3.	This goal might exceed my current abilities.	1	2	3	4	5
4.	The deadline for completing this goal is unrealistic.	1	2	3	4	5
5.	I am inhibited by lack of materials to complete this goal.	1	2	3	4	5
6.	It is widely known that I have this goal.	1	2	3	4	5
7.	I will need to strive hard to achieve this goal.	1	2	3	4	5
8.	I have enough time in which to complete this goal.	1	2	3	4	5

		Strongly disagree				Strongly agree
9.	I chose to have this goal	1	2	3	4	5
10.	So far, progress on this goal has been slow.	1	2	3	4	5
11.	There are a number of different paths to achieving this goal.	1	2	3	4	5
12.	There is insufficient time in which to achieve this goal.	1	2	3	4	5
13.	I need others to do their bit so that I can attain this goal.	1	2	3	4	5
14.	It is hard to know what stage I am at with this goal.	1	2	3	4	5
15.	I doubt that I will achieve this goal.	1	2	3	4	5
16.	Other people think this goal is trivial.	1	2	3	4	5
17.	I have the necessary abilities to achieve this goal.	1	2	3	4	5
18.	This goal can be divided into smaller parts.	1	2	3	4	5
19.	This goal requires detailed planning.	1	2	3	4	5
20.	This goal is ambiguous.	1	2	3	4	5
21.	I enjoy working towards this goal.	1	2	3	4	5
22.	This goal can be simplified by splitting it up.	1	2	3	4	5
23.	This is an uncomplicated goal.	1	2	3	4	5
24.	This goal was set for me.	1	2	3	4	5
25.	I get a lot of satisfaction out of pursuing this goal.	1	2	3	4	5
26.	I get feedback on the progress I am making towards this goal.	1	2	3	4	5
27.	This goal is simple.	1	2	3	4	5
28.	As regards this goal, I feel in command of the situation.	1	2	3	4	5
29.	I can break this goal down into sub-goals.	1	2	3	4	5
30.	This goal is easy.	1	2	3	4	5
31.	My achieving this goal relies on others fulfilling their role.	1	2	3	4	5
32.	I set this goal for myself	1	2	3	4	5
33.	This goal is important to me	1	2	3	4	5
34.	This goal is specific.	1	2	3	4	5
35.	It is difficult to know how far I have progressed towards this goal.	1	2	3	4	5
36.	My performance so far on this goal has been good.	1	2	3	4	5

		Strongly disagree				Strongly agree
37.	People fail to tell me how I am progressing in relation to this goal.	1	2	3	4	5
38.	I get a lot of support in pursuit of this goal.	1	2	3	4	5
39.	This goal is difficult.	1	2	3	4	5
40.	I mean to achieve this goal.	1	2	3	4	5
41.	I have the skills needed to attain this goal.	1	2	3	4	5
42.	It is a public fact that I have this goal.	1	2	3	4	5
43.	This is a tough goal.	1	2	3	4	5
44.	This goal is clearly defined.	1	2	3	4	5
45.	This goal means little to me	1	2	3	4	5
46.	I can see more than one method of achieving this goal.	1	2	3	4	5
47.	There is a good chance that I will achieve this goal.	1	2	3	4	5
48.	Many people know that I have this goal.	1	2	3	4	5
49.	Other people undermine my efforts to achieve this goal.	1	2	3	4	5
50.	This is a hard goal.	1	2	3	4	5
51.	This is a worthwhile goal for me	1	2	3	4	5
52.	Other people think this goal is of little consequence.	1	2	3	4	5
53.	This is a complex goal.	1	2	3	4	5
54.	To achieve this goal, I have to compete with others.	1	2	3	4	5
55.	I have the necessary tools to achieve this goal	1	2	3	4	5
56.	I am powerless in relation to this goal.	1	2	3	4	5
57.	I am sure that I will achieve this goal.	1	2	3	4	5
58.	To achieve this goal my performance has to be superior to others.	1	2	3	4	5
59.	I will need to stretch myself to achieve this goal.	1	2	3	4	5
60.	It is difficult to know how well I am doing in relation to this goal.	1	2	3	4	5
61.	I have enough resources to achieve this goal	1	2	3	4	5
62.	There are various possible approaches to achieving this goal.	1	2	3	4	5
63.	So far, I seem to be getting nowhere with this goal.	1	2	3	4	5

		Strongly disagree				Strongly agree
64.	I can measure, step by step, my progress towards this goal.	1	2	3	4	5
65.	This goal fits in well with my other goals	1	2	3	4	5
66.	Other people are unconcerned whether I achieve this goal.	1	2	3	4	5
67.	I am really committed to achieving this goal.	1	2	3	4	5
68.	I dislike having to work towards this goal.	1	2	3	4	5
69.	I find it hard to see how this goal could be broken down.	1	2	3	4	5
70.	It matters to other people that I achieve this goal.	1	2	3	4	5
71.	I will be pushed for time to achieve this goal.	1	2	3	4	5
72.	I rely on others to do their part so that I can achieve this goal.	1	2	3	4	5
73.	This goal can be adjusted.	1	2	3	4	5
74.	This goal can be achieved in a number of ways.	1	2	3	4	5
75.	I will have to exert myself to achieve this goal.	1	2	3	4	5
76.	To reach this goal I must do better than others.	1	2	3	4	5
77.	I have a shortage of tools in respect to this goal	1	2	3	4	5
78.	So far, I have made a lot of progress towards achieving this goal.	1	2	3	4	5
79.	I will have to push myself to achieve this goal.	1	2	3	4	5
80.	This goal can be changed.	1	2	3	4	5
81.	I have people to turn to for advice about this goal.	1	2	3	4	5
82.	So far, I am on course to achieving this goal.	1	2	3	4	5
83.	I fully intend to achieve this goal.	1	2	3	4	5
84.	I selected this goal.	1	2	3	4	5
85.	This goal requires teamwork.	1	2	3	4	5
86.	I am kept informed about my progress towards this goal.	1	2	3	4	5
87.	This goal can be amended.	1	2	3	4	5
88.	This goal seems to contradict the purpose of my other goals.	1	2	3	4	5
89.	I have to outperform others to achieve this goal.	1	2	3	4	5
90.	Pursuing this goal gives me a lot of pleasure.	1	2	3	4	5

		Strongly disagree				Strongly agree
91.	I have people to encourage me with this goal.	1	2	3	4	5
92.	I am kept in the picture about my progress towards this goal.	1	2	3	4	5
93.	I am helpless in relation to this goal.	1	2	3	4	5
94.	I have the necessary expertise to achieve this goal..	1	2	3	4	5
95.	It is unlikely that I will achieve this goal.	1	2	3	4	5
96.	This goal is vague.	1	2	3	4	5
97.	This goal conflicts with some of my other goals.	1	2	3	4	5
98.	I am determined to reach this goal.	1	2	3	4	5
99.	I value this goal.	1	2	3	4	5
100.	My performance so far on this goal has been poor.	1	2	3	4	5
101.	This goal clashes with my other goals.	1	2	3	4	5
102.	I am in control of this goal	1	2	3	4	5

This scale consists of a number of words that describe different feelings and emotions. Please read each item and then circle the appropriate number which seems to best represent how your goal makes you feel. There are no right or wrong answers and no trick questions. It is your views that interest us.

1 = Very slightly or not at all
2 = A little
3 = Moderately
4 = Quite a bit
5 = Extremely

My goal makes me feel ...

		Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1.	Sad	1	2	3	4	5
2.	Energetic	1	2	3	4	5
3.	Dejected	1	2	3	4	5
4.	Lively	1	2	3	4	5
5.	Enthusiastic	1	2	3	4	5
6.	Peaceful	1	2	3	4	5
7.	Grouchy	1	2	3	4	5
8.	Strong	1	2	3	4	5
9.	Elated	1	2	3	4	5
10.	Interested	1	2	3	4	5
11.	Ready-to-go	1	2	3	4	5
12.	Attentive	1	2	3	4	5
13.	Scared	1	2	3	4	5
14.	Shaky	1	2	3	4	5
15.	Playful	1	2	3	4	5
16.	Nervous	1	2	3	4	5
17.	Annoyed	1	2	3	4	5
18.	Calm	1	2	3	4	5

My goal makes me feel ...

		Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
19.	Determined	1	2	3	4	5
20.	Relaxed	1	2	3	4	5
21.	Excited	1	2	3	4	5
22.	Tense	1	2	3	4	5
23.	Bad tempered	1	2	3	4	5
24.	Distressed	1	2	3	4	5
25.	Exhausted	1	2	3	4	5
26.	Alert	1	2	3	4	5
27.	Lonely	1	2	3	4	5
28.	Proud	1	2	3	4	5
29.	Discouraged	1	2	3	4	5
30.	Tired	1	2	3	4	5
31.	Cheerful	1	2	3	4	5
32.	Inspired	1	2	3	4	5
33.	Weary	1	2	3	4	5
34.	Downhearted	1	2	3	4	5
35.	Fatigued	1	2	3	4	5
36.	Lighthearted	1	2	3	4	5
37.	Afraid	1	2	3	4	5
38.	Angry	1	2	3	4	5
39.	Vigorous	1	2	3	4	5
40.	Uneasy	1	2	3	4	5
41.	Sluggish	1	2	3	4	5
42.	Composed	1	2	3	4	5
43.	Hostile	1	2	3	4	5
44.	Anxious	1	2	3	4	5
45.	Gloomy	1	2	3	4	5

My goal makes me feel ...

		Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
46.	Active	1	2	3	4	5
47.	Guilty	1	2	3	4	5
48.	Full of pep	1	2	3	4	5
49.	Upset	1	2	3	4	5
50.	Serene	1	2	3	4	5
51.	Furious	1	2	3	4	5
52.	Jittery	1	2	3	4	5
53.	Joyful	1	2	3	4	5
54.	Untroubled	1	2	3	4	5
55.	Ashamed	1	2	3	4	5
56.	Jolly	1	2	3	4	5
57.	Irritable	1	2	3	4	5
58.	Mad	1	2	3	4	5
59.	Drowsy	1	2	3	4	5

Do you have any other comments about your goal?

....

....

....

Please (if happy to do so) give your:

Age   _____years

Gender   Male / Female

Sincere thanks for your help. Please return this questionnaire to Josephine Wray.

Appendix E

Letter to Participants – Main Study

April 1997

Dear Sir/Madam

I am a postgraduate research student at Bangor University. My colleagues and I have a long-standing interest in work and health, and we are currently looking at the effect that individuals' goals have on their performance and well-being. We are interested in your opinions about your work goals and I would be very grateful if you could take some time out to fill in these questionnaires for me.

When we asked ***** if we could approach their employees, it was made clear that all information given to us will be processed in a way that does not identify any individual. Please therefore be assured that the information you give us will be treated in the strictest confidence.

It is my intention to return in approximately 3 months time to administer further questionnaires. I will therefore need to take your name and department details so that I can get back to you. These details will be kept separately from your questionnaires as part of our procedures to ensure confidentiality.

If you have any questions please do not hesitate to ask me. Thank you for very much for your time and help with this study.

Yours faithfully

JOSEPHINE WRAY

Appendix F
Goal Setting Questionnaire (Intervention Study)

Goal Setting Questionnaire

By now you will probably have thought about the degree classification you are aiming
for. What I would like you to do is take a few minutes to think about your goal for
Research Methods. What mark are you aiming for?

Please state your goal.
....
....

This questionnaire contains various statements which you might use to describe a
goal or target. Read each statement carefully and circle the number which seems to
best represent how you see your goal. There are no right or wrong answers and no
trick questions. It is your views that interest us. Please be assured that this is a
confidential questionnaire.

1 = Strongly disagree
2 = Disagree
3 = Neither agree nor disagree
4 = Agree
5 = Strongly agree

		Strongly disagree				Strongly agree
1.	I get a lot of support in pursuit of this goal.	1	2	3	4	5
2.	I am sure that I will achieve this goal.	1	2	3	4	5
3.	I have the necessary abilities to achieve this goal.	1	2	3	4	5
4.	I am in control of this goal.	1	2	3	4	5
5.	This goal means little to me.	1	2	3	4	5
6.	I fully intend to achieve this goal.	1	2	3	4	5
7.	Other people undermine my efforts to achieve this goal.	1	2	3	4	5
8.	I have the skills needed to attain this goal.	1	2	3	4	5
9.	I have people to turn to for advice about this goal.	1	2	3	4	5
10.	I have people to encourage me with this goal.	1	2	3	4	5
11.	I am determined to reach this goal.	1	2	3	4	5

		Strongly disagree				Strongly agree
12.	I am helpless in relation to this goal.	1	2	3	4	5
13.	I am really committed to achieving this goal.	1	2	3	4	5
14.	This is a worthwhile goal for me.	1	2	3	4	5
15.	It is unlikely that I will achieve this goal.	1	2	3	4	5
16.	As regards this goal, I feel in command of the situation.	1	2	3	4	5
17.	This goal is important to me.	1	2	3	4	5
18.	This goal might exceed my current abilities.	1	2	3	4	5
19.	I doubt that I will achieve this goal.	1	2	3	4	5
20.	I mean to achieve this goal.	1	2	3	4	5
21.	There is a good chance that I will achieve this goal.	1	2	3	4	5
22.	I have the necessary expertise to achieve this goal..	1	2	3	4	5
23.	I value this goal.	1	2	3	4	5
24.	I am powerless in relation to this goal.	1	2	3	4	5

Appendix G

Predicted Scores (Intervention Study)

UNIVERSITY OF WALES, BANGOR
School of Sport Health & Exercise Sciences

RESEARCH PROJECT

Name (please print legibly) _____

Based on you understanding of the module to date and feedback from your assignments, please tick the box that indicates your realistic expectation of your final mark for the research methods module:

20 - 29 ☐

30 - 39 ☐

40 - 49 ☐

50 - 59 ☐

60 - 69 ☐

70 - 79 ☐

80+ ☐

I give my consent for the experimenter to use my end of module exam results for Research Methods and I have been informed that all the research material will be held in confidence.

Signed ....

I am willing to participate in the next phase of the experiment.

Signed ....

IN CONFIDENCE

Appendix H

Instructions for Intervention Study

As a participant of this research, you will be asked to fill in two questionnaires. Following this there will be an interview lasting for approximately 30 minutes. In approximately a weeks time you will be asked to complete the questionnaires again. These will be mailed to you and you are required to fill them in and return them to the researcher.

If you have any questions now, during or following the research please do not hesitate to contact Jo Wray (Room 210, ext. 3495).

Thank you for your co-operation.

Appendix I

Informed Consent Form for the Intervention Study

UNIVERSITY OF WALES, BANGOR

INFORMED CONSENT BY PARTICIPANTS
OF A RESEARCH PROJECT OR EXPERIMENT

The University and those conducting this project subscribe to the ethical conduct of research and to the protection at all times o te interests, comfort, and safety of participants. This form and the information it contains are given to you for your own protection and full understanding of the procedures. Your signature on this form will signify that you have a received a document labelled "Instructions" which describes the procedures of this research project, that you have received an adequate opportunity to consider the information in the document, and that you voluntarily agree to participate in the project.

I understand the procedures to be used in this experiment. I understand that I may withdraw my participation in this experiment at any time.

I also understand that I may register any complaint I might have about the experiment with Dr. Roger Eston, Head of the School of Sport, Health and Exercise Sciences at the University of Wales, Bangor.

I may obtain copies of the results of this study, upon its completion, by contacting: Jo Wray in Room 210, George Building, Holyhead Road (phone 383495).

I have been informed that the research material will be held confidential.

I give my consent that the experimenter is given access to my end of module exam results for Research Methods.

NAME (please type or print legibly): _____

ADDRESS: _____

_____

SIGNATURE: _____ WITNESS: _____

DATE: _____

Appendix J
Script for Intervention Study

This is an example of the types of questions asked during a session, however the process was led by the participants, and they were encouraged to generate their own pros, cons, and strategies.

Rapport Building (TREATMENT AND CONTROL GROUPS)

Why did you come to choose to do this course?

What was it about this course that interested you?

Was there any reason you chose Bangor, apart from the course?

How do you feel about the course?

Typical Day

What modules are you taking?

Can you tell me something about your typical week/day

How much time do you spend studying outside lecture times

Directive

If you spend X number of hours a week studying how many of those are on Research Methods?

How do you feel are you getting on with Research Methods?

How important do you think that Research Methods is to the course? And you?

Ambivalence/Motivation

What are the good things about spending more time on Research Methods

What are the not so good things about spending more time on Research Methods

	Pros	Cons
Change	Better grades	Time consuming
	Better understanding	Boring
	Help with Project	
	Can do a project	
No Change	More time to do other subjects	Might not do so well in degree
	More time for socialising	Have to do a dissertation
	More time for Sport	

Readiness to Change

On a scale from 1 to 10 how motivated are you right now to spend more time and effort on Research Methods?

Confidence

How confident are you on a scale of 1 to 10 that you can take some more time out for Research Methods

Action Planning (TREATMENT AND CONTROL GROUPS)

What sort of preparation do you do for your exams/How do you revise for your exams?

Discussion of the strategies for attaining better understanding and revision strategies for Research Methods. For example, attend lectures, attend shadow classes, more time reading, doing homework, working with others in a study group, reading back over notes, previous years exams, talk to lecturer/shadow class lecturer

Appendix K

Follow-up Letter (Intervention Study)

6th December 1999

Dear

You kindly took part in the first phase of my research project. As I mentioned in the interview I now need you to complete the enclosed questionnaires. This needs to be done as soon as possible after you receive them. I have enclosed an envelope and would appreciate it if you could return the completed questionnaires either to Katherine (general office) or directly to me (room 210).

When I receive your questionnaires I shall complete a skills unit proforma for you and pass it on to Katherine so that you can be credited for your participation. If you would like to discuss any aspect of what we talked about during the interview, or if you have any questions regarding this study please come and find me and I will be more than happy to discuss them with you.

Thank you again for your help with this study.

Regards

Jo Wray

Appendix L

Motivation Questionnaire (Intervention Study)

Why do you go to University?

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to University. Circle only one number for each question.

Does not correspond	Corresponds a little	Corresponds moderately	Corresponds a lot	Corresponds exactly
1	2	3	4	5	6	7

1. Because with only secondary school education I would not find a job that pays enough.   1 2 3 4 5 6 7

2. Because I experience pleasure and satisfaction while learning new things.   1 2 3 4 5 6 7

3. Because I think that a post-secondary education will help me better prepare for the career I have chosen.   1 2 3 4 5 6 7

4. For the intense feelings I experience when I am communicating my own ideas to others.   1 2 3 4 5 6 7

5. Honestly I don't know. I truly have the impression that I am wasting my time in university.   1 2 3 4 5 6 7

6. For the pleasure I experience while doing better than I thought I could in my studies.   1 2 3 4 5 6 7

7. To prove to myself that I can do better than I did in school.   1 2 3 4 5 6 7

8. In order to a get more prestigious job later on.   1 2 3 4 5 6 7

9. For the pleasure I experience when I discover new things never seen before.   1 2 3 4 5 6 7

10. Because eventually it will allow me to enter the job market in a field that I like.   1 2 3 4 5 6 7

11. For the pleasure that I experience when I read interesting authors.   1 2 3 4 5 6 7

12. I once had good reasons for going to university, however now I wonder whether I should continue.   1 2 3 4 5 6 7

Does not correspond	Corresponds a little	Corresponds moderately	Corresponds a lot		Corresponds exactly
1	2	3	4	5	6	7

13. For the pleasure that I experience when I am doing well in something that I am good at.　　1 2 3 4 5 6 7

14. Because the fact of succeeding in university makes me feel important.　　1 2 3 4 5 6 7

15. Because I want to lead a comfortable life later on.　　1 2 3 4 5 6 7

16. For the pleasure that I experience in knowing more about the subjects which appeal to me.　　1 2 3 4 5 6 7

17. Because this will help me make a better choice regarding my career orientation.　　1 2 3 4 5 6 7

18. For the pleasure that I experience when I feel completely absorbed by what certain authors have written.　　1 2 3 4 5 6 7

19. I don't understand why I go to university and, frankly, I don't give a damn.　　1 2 3 4 5 6 7

20. For the satisfaction I experience when I am in the process of achieving difficult academic activities.　　1 2 3 4 5 6 7

21. To show myself that I am an intelligent person.　　1 2 3 4 5 6 7

22. In order to have a better salary later on.　　1 2 3 4 5 6 7

23. Because my studies allow me to continue to learn a lot of things that interest me.　　1 2 3 4 5 6 7

24. Because I believe that a few additional years of education will improve my competence as a worker.　　1 2 3 4 5 6 7

25. For the "high" feeling that I experience whilst reading about various interesting subjects.　　1 2 3 4 5 6 7

26. I don't know. I don't understand what I am doing at university.　　1 2 3 4 5 6 7

27. Because university allows me to experience a personal satisfaction in my quest for excellence in my studies.　　1 2 3 4 5 6 7

Does not correspond	Corresponds a little	Corresponds moderately	Corresponds a lot	Corresponds exactly
1	2	3	4	5	6	7

28. Because I want to show myself that I can succeed in my studies. 1 2 3 4 5 6 7