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The relationship between autobiographical memory and depression in survivors of childhood sexual abuse.

Burnside, Elizabeth

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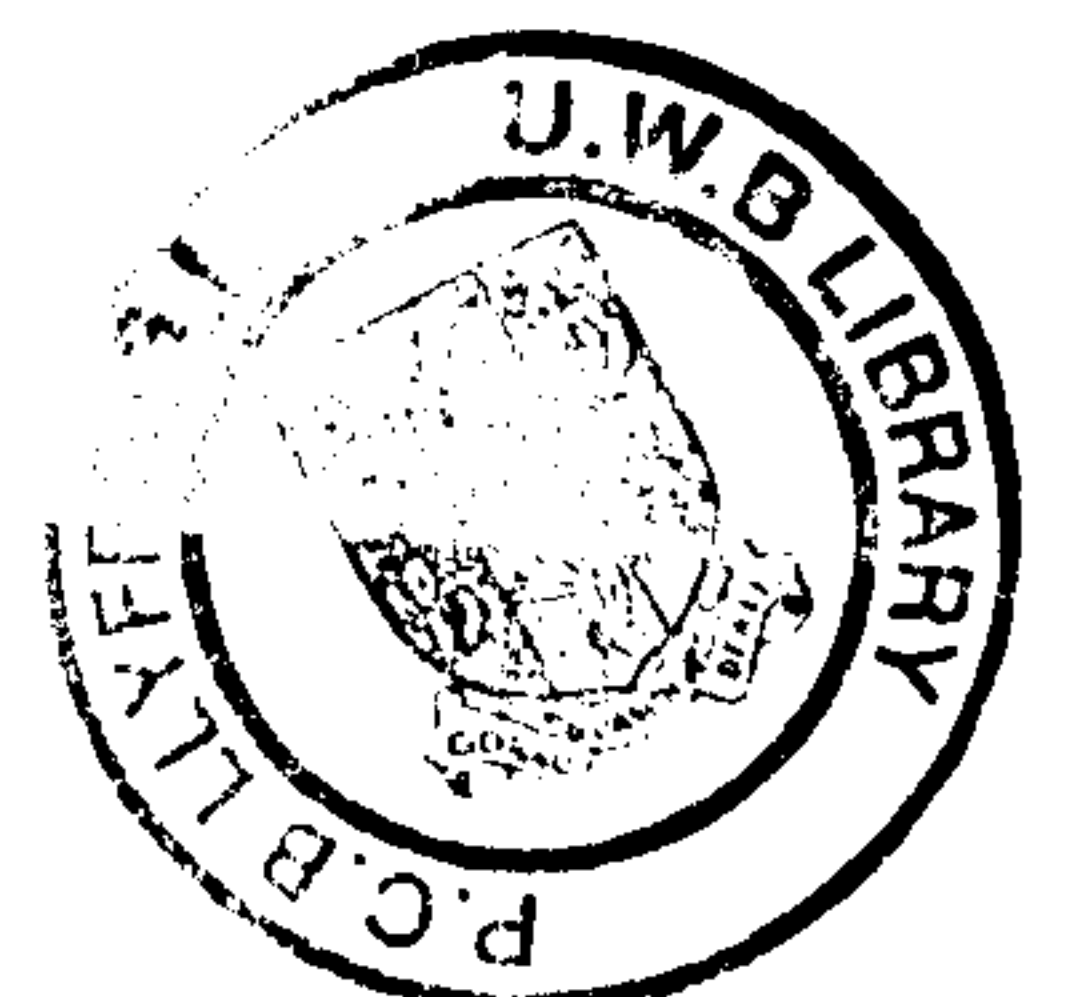
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**The Relationship Between Autobiographical Memory and Depression in Survivors of
Childhood Sexual Abuse.**

Elizabeth Burnside

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Ethics Proposal: pages 2-1 – 2-35

Literature Review Appendix A: pages 3-29 – 3-30

Research Paper Appendix A: pages 4-27 – 4-29

Readers may consult the original thesis if they wish to see this material.

CONTENTS

	Page
Abstract/ summary	1 - 1
Declarations	1 - 2
Ethics Proposal	2 - 1
Appendix A Dissociative Experiences Scale	2 - 11
Appendix B Autobiographical Memory Test Instructions	2 - 15
Appendix C Schedule for Affective Disorders and Schizophrenia - Depression section	2 - 17
Appendix D Participant Information Sheet	2 - 25
Appendix E Participant Consent Form	2 - 28
Appendix F List of Support Agencies	2 - 30
Appendix G Letter of Approval from Research Ethics Committee	2 - 33
 Literature Review	
Title	3 - 1
Abstract	3 - 2
Literature review	3 - 3
References	3 - 23
Appendix A. Submission guidelines for Clinical Psychology Review	3 - 28

	<i>Page</i>
Research Paper	
Title page	4 - 1
Abstract	4 - 2
Introduction	4 - 3
Method	4 - 8
Results	4 - 11
Discussion	4 - 16
References	4 - 22
Appendix A. Submission Guidelines for Psychological Medicine.....	4 - 26
 Critical Review	
Title	5 - 1
Critical Review	5 - 2
References	5 - 10
 Appendix A Word counts	 6 - 1

The Relationship Between Autobiographical Memory and Depression in Survivors of Childhood Sexual Abuse.

Abstract

Overgeneral autobiographical memory (AM) style has been observed in depressed clinical groups when compared with controls. It has been proposed that an overgeneral style is the consequence of traumatic experiences in childhood and serves to minimise the affect associated with painful memories. It has also been suggested that overgeneral AM results in poor problem solving ability and is therefore an indicator of vulnerability to depression. This thesis reviews the evidence relevant to these propositions and in particular considers whether overgeneral AM is capable of longer term protection against distress, or is more importantly a vulnerability factor as suggested by its association with poor problem solving. To examine this issue, 41 women who had reported childhood sexual abuse (CSA) as participants in a previous study, completed the Autobiographical Memory Test (AMT) and were interviewed about adult episodes of major depression using the Schedule for Affective Disorders and Schizophrenia - Lifetime version. Current depression was assessed using the 13 item Beck Depression Inventory. Women not reporting depression in adulthood gave significantly fewer specific responses to negative cue words (but not positive or neutral cue words) than those reporting episodes which fulfilled DSM-IV diagnostic criteria for major depression. Lower numbers of specific responses for cue words combined were associated with more severe CSA, CSA lasting over a longer duration and starting at an earlier age. Multiple regression analysis suggested that of these, duration of abuse was the most important predictor. These results support the association between overgeneral AM and CSA, but suggest that AM is more importantly a protective factor against depression. The results are discussed in the context of previous findings and longitudinal research is recommended to address the issues raised.

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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Childhood Sexual Abuse, Autobiographical Memory and Depression

Elizabeth L. Burnside* (proposed additional author: Mike Startup)

School of Psychology, University of Wales, Bangor, UK.

Running Head: CSA, AUTOBIOGRAPHICAL MEMORY AND DEPRESSION

* Requests for reprints should be addressed to Ms Elizabeth Burnside, NWCPC, School of Psychology, University of Wales, 43 College Road, Bangor, Gwynedd LL57 2DG, UK.

Abstract

Childhood Sexual Abuse (CSA) has been associated with depression in adult life (Bifulco, Brown & Adler 1991, Fergusson, Horwood & Lynskey 1996), a finding which holds when controlling for other potentially confounding experiences such as parental neglect or physical abuse. Recently, attention has been directed towards understanding psychological mechanisms which may account for this association, including how memory systems deal with processing of traumatic information. One area of interest has been research into the specificity of autobiographical memories (AM). This paper describes proposed models and reviews findings relating to autobiographical memory specificity, childhood sexual abuse and adult depression and makes suggestions for future direction of research.

Key Words: Childhood Sexual Abuse, Autobiographical Memory, Depression

Childhood Sexual Abuse, Autobiographical Memory and Depression

The presence of overgeneral autobiographical memory styles in clinical samples when compared to controls has been well established. Initially, this was a chance discovery made by Williams and Broadbent (1986). Their study aimed to investigate times taken to retrieve autobiographical memories to positive and negative cue words by a sample of patients who had recently taken a deliberate overdose, in comparison to controls. Although the clinical group were slower to retrieve memories from their own lives in response to positive cue words, Williams and Broadbent reported that this was largely due to their tendency to respond initially with memories which were not appropriate to the requirements of the test. Although asked for memories of a specific event from their lives, the clinical group were more likely to give non-specific responses such as 'every time I go swimming' or 'when I was in 6th form'.

Subsequent studies have found similar results when comparing control groups with patients with depression (Williams & Scott, 1988; Puffet, Jenin-Marchot, Timsit - Berthier, & Timsit, 1991; Brittlebank, Scott, Williams & Ferrier, 1993; Kuyken & Dalgleish, 1995), Obsessive-Compulsive Disorder (Wilhelm, McNally, Baer, & Florin, 1997), Post Natal Depression (Croll & Bryant, 2000), Post Traumatic Stress Disorder (McNally, Lasko, Macklin & Pitman, 1995) and Borderline Personality Disorder (Jones et al., 1999). Wessel, Meeren, Peeters, Arntz and Merckelbach, (2001) argue that overgeneral autobiographical memory style is particularly associated with depression, depression frequently being a comorbid aspect of the other clinical states.

Although consistent differences between clinical and non clinical groups have been found across a range of studies, it is not obvious what (if any) the role is of overgeneral memory style in the development of depression. Recently, models have been described which place autobiographical memory style as a consequence of childhood abuse and an indicator of vulnerability to depression. Before describing these models more fully, it is necessary to address the assumption that autobiographical memory style is a stable trait of the individual, which is implicit in its description as a consequence of early experience.

Stability

Williams and Dritschel (1988) investigated autobiographical memory in a group of ex-patients who had taken an overdose between 3 and 14 months prior to taking part in their study and reported that they remained overgeneral in comparison to controls. However, the conclusion that autobiographical memory is a stable phenomenon was questionable, since no checks were made to ensure that the ex-patient group were not still depressed. Their scores on the Profile of Mood States questionnaire were no different to those of a recent overdose group and they were significantly more hopeless than the control group. Brittelbank et al. (1993) followed up a sample of depressed patients over seven months. Recovery was established by ratings on the Hamilton Rating Scale for Depression. They reported that for those who recovered, autobiographical memory scores for emotional cue words had not changed, again suggesting stability. They did find however, that recovered patients' scores for neutral cue words had changed significantly to be more specific and there

was a tendency towards greater specificity for all cue words. Mackinger, Pachinger, Leibetseder and Fartacek (2000) compared a sample of formerly depressed women with a sample of never depressed women and reported that those with a history of major depression retrieved significantly more generic memories to negative cue words than those without a history of depression. These results again implied that autobiographical memory specificity is a stable characteristic of an individual. However, all of these studies reviewed autobiographical memory style after relatively short follow up periods. In the longest, Mackinger et al. report that participants in the former patient group had been depressed between one month and 5 years prior to testing, but do not report the proportion of participants tested soon after depression rather than later. Although no participants fulfilled diagnostic criteria for depression, for those more recently depressed, follow up may again be relatively short term and indeed 8 of the 21 formerly depressed participants were taking antidepressant medication. Contrary to these findings, in a study of depressed patients versus controls, Kuyken and Dalgleish (1995) compared autobiographical memory within their control group, between those with and without a history of depression. They found no differences, suggesting that overgeneral memory style is not a stable trait associated with individuals who are vulnerable to depression. It is likely that history of depression within this control group was not as recent as in the other studies where recruitment was from clinical lists, and this might explain the discrepant findings.

To summarise, although stability of autobiographical memory is suggested, further work is still needed to establish that this assumption holds over the longer

term, at times which are temporally distant from episodes of depression. This is particularly important in view of the models (outlined below) which rest partly on the assumption that autobiographical memory style is a trait established during childhood, many years before it is thought to be manifest as a marker of vulnerability to depression.

Models linking childhood experience, autobiographical memory and depression

Williams (1996) and Williams, Stiles and Shapiro (1999) outlined models which place autobiographical memory style as an intermediary between childhood experiences and adult depression. However, although these models are not contradictory, different emphasis is placed within these models on the role of problem solving deficits versus the direct effects of memory disturbance.

Williams (1996) described how evidence from developmental studies suggests that young children typically recall autobiographical events in a generic way. Unless given extensive cueing, their responses tend to represent classes of events such as 'we eat at the table'. Williams proposed that children who suffer negative events (such as abuse) may maintain this memory style, even into adulthood, as a way of managing affect associated with these adverse events. It was argued that access to a personal database of specific experiences is crucial to the generation of solutions to novel problem situations, and that this would account for relationships found between autobiographical memory style and poor problem solving, which is itself associated with depression (e.g. Marx, Williams and Claridge, 1992). At the same time however, Williams put forward an alternative or additional explanation for the association

between CSA and autobiographical memory. It was suggested that attention required to deal with intrusive memories of abuse may reduce the capacity to retrieve specific memories.

Williams et al. (1999) write about the assimilation model of emotional processing of difficult experiences, and include autobiographical memory style within this model. Although the model does not provide an alternative account for development of an overgeneral style in childhood, it does make more of the direct and distressing effects of memory disturbance in adulthood, without reference to problem solving deficits.

The model proposes that problematic experiences need to be cognitively assimilated into the individual's existing schema, and the schema changed accordingly in order for the person to 'move on'. Assimilation is said to progress in stages "from being warded off, to entering awareness as unwanted thoughts, to becoming clarified as a problem, to attracting understanding and insight, to contributing to adaptive changes and finally to being mastered and integrated into everyday life" (Williams et al., 1999, p286). The first of these stages is thought to accompany a state which could be described as blissful ignorance, but as the experience enters awareness, its presence becomes increasingly painful until the individual begins to integrate and understand it. Within this model, Williams et al. describe the pain and panic paradigms and the role of memory processes in the assimilation of problematic material. Both paradigms relate to the 'warding off' stage of assimilation.

Briefly, the pain paradigm describes how some experiences, by virtue of their distressing nature, remain inaccessible to verbal retrieval strategies and exist as sensory fragments. The term 'pain' is used to encapsulate both the distress associated with such memories and also their non-verbal, sensory nature. However, these memories are said to remain stored as 'unfinished business'. The prospective memory system is the means by which we remember to do something in the future (e.g. put the rubbish out, send a birthday card). Williams et al. (1999) propose that 'pain' memories are periodically brought to the fore by the prospective memory system as reminders that the unfinished business is waiting to be dealt with, in this case to undergo the process of assimilation. It is suggested that this phenomenon is responsible for intrusive memories often reported by trauma survivors. Recently, it has been reported that patients with major depression experience intrusive memories to a similar degree as patients with post traumatic stress disorder (Kuyken & Brewin 1994).

The panic paradigm is concerned with distressing memories that *are* verbally accessible. Williams et al. (1999) argue that individuals may inhibit assimilation of such memories for fear that the recalling or reporting of them will be overwhelming. This is likened to experiences of people with panic disorder who engage in safety behaviours in order to save themselves in situations which they perceive to be more dangerous than they actually are.

Williams et al. (1999) suggest that overgeneral autobiographical memory style is one way in which 'dangerous' memories are warded off. This process is relevant to the panic paradigm, but also to the warding off of intrusive fragmented memories

within the pain paradigm. However, although warding off minimises current distress while it works, it prevents the necessary assimilation of information from taking place. (Again however, the authors point out the possibility that autobiographical memory difficulties are caused by reduced attentional capacity due to the presence of intrusive thoughts.)

Although this recent work outlines in more detail the possible role of autobiographical memory specificity in the onset of depression, it is not clear how problem solving deficits fit in. The assimilation model does not directly contradict the presence of problem solving difficulties, but seems to imply that depression is influenced more directly by memory disturbance, rather than indirectly through poor problem solving. Moreover, overgeneral autobiographical memory in this context can be seen as a regulator capable to some extent of controlling the speed at which assimilation takes place, or even temporarily preventing the onset of depression.

In order to evaluate the merits of these models as explaining the role of autobiographical memory specificity, two types of evidence need to be considered. Firstly, it is necessary to consider whether or not research so far has done enough to establish a clear link between childhood trauma, autobiographical memory and adult depression. Secondly, other evidence needs to be reviewed to see if autobiographical memory specificity is consistent with the models described.

The link between childhood trauma, autobiographical memory and depression

Evidence to support the proposition that autobiographical memory is related to childhood experiences was reported by Kuyken and Brewin (1995). They studied a

sample of depressed women and reported that within this depressed group, those who reported experiencing sexual abuse during childhood gave more overgeneral responses to the autobiographical memory test than those who did not. There was not the same association between autobiographical memory style and other reported childhood experiences such as neglect or physical abuse. Kuyken and Brewin's study established a link between autobiographical memory and childhood trauma, and also implied that memory disturbance is related to certain types of trauma (i.e. sexual abuse, not physical abuse), rather than any traumatic experience.

Although establishing for the first time a link between autobiographical memory and childhood experiences, these results raise further questions about the role of autobiographical memory in depression. Since they did not compare autobiographical memory scores with a non-clinical control group, we do not know if those depressed yet not reporting abuse are any different in autobiographical memory style to the general population. Similarly, it is possible that all CSA survivors possess an overgeneral autobiographical memory style regardless of depression, or, as Williams (1996) suggested, that overgeneral memory is a mediator between the experience of abuse and subsequent depression. If the first of these propositions were true, it is possible that previous studies finding overgeneral memory among clinical groups have done so simply because such groups are likely to contain a higher number of CSA survivors than non-clinical groups.

A few studies have been reported that are relevant to this question. In the first, Henderson, Hargreaves, Gregory and Williams (2000) investigated whether

overgeneral autobiographical memory style is a feature of a non-clinical sample of women who had experienced CSA. Female students were asked to complete a written version of the autobiographical memory test, and a questionnaire about experiences of childhood sexual abuse. They found that a significantly greater proportion of general responses were given to the autobiographical memory task from those reporting childhood sexual abuse than from those who did not. Although adding some support to the link between CSA and adult autobiographical memory, because no information was obtained about history of clinical depression, a similar query remains to that raised above following the Kuyken and Brewin (1995) study. The results may represent a genuine link between autobiographical memory and CSA, but it is possible that the association is due to a higher than average number of women in the CSA group who have also experienced depression. The majority of participants reported repeated abuse lasting over one year. This is not typical of general population studies of CSA where a larger proportion of one-off incidents are reported (e.g. Hill et al., in press). The students used in this study may not be representative of the general population and may be more similar to a clinical group than was assumed.

The question of the relative association of autobiographical memory between CSA and depression was addressed by Wessel et al. (2001), who looked at autobiographical memory performance (again using a written test) and childhood trauma in a sample of patients with anxiety disorder and/or major depression, alongside a group of healthy controls. In contrast to the hypothesis concerning childhood trauma as the source of overgenerality, only education level and current

major depression predicted autobiographical memory performance in the group as a whole. Rather than answering the question of the role of autobiographical memory in depression among survivors of childhood trauma, this study contradicts the findings of Kuyken and Brewin (1995) and leads us to question again the role of trauma in the development of overgeneral memory.

Some methodological features of this study do however limit the conclusions that can be drawn. As the authors point out, the reporting of childhood trauma was fairly infrequent and perhaps not sufficient to detect a relationship with autobiographical memory. Kuyken and Brewin (1995) found that only CSA was related to autobiographical memory performance and not other indices of trauma such as physical abuse and neglect. Wessel and colleagues used a questionnaire measure for childhood trauma consisting of five sub-scales (sexual abuse, physical abuse, emotional abuse, emotional neglect & physical neglect). Mean scores from the five sub-scales suggest that reports of sexual abuse within the sample were very infrequent. The sub-scales from the trauma questionnaire used were entered into an analysis as continuous variables which represent the number of items from each sub-scale endorsed. As we do not yet have evidence concerning the importance or otherwise of severity of abuse, it may have been better initially to enter the trauma variables simply as either present or absent.

The role of depression and whether or not current depression is the most important factor is unclear from this study. Although remitted depression was not significantly related to autobiographical memory scores (again questioning the stability

of autobiographical memory), this was only recorded for patients with a current diagnosis of anxiety disorder. No information was sought from the control group about past episodes of major depression.

The studies by Wessel et al. (2001) and Henderson et al. (2000) both used a written version of the autobiographical memory test. Little is known about how written versions compare with the widely used verbal test.

Another potential source of the discrepancy in findings is that unlike other studies (Kuyken & Brewin, 1995; Henderson et al., 2000), Wessel and colleagues' sample consisted of both male and female participants, the others being only female. It is possible that male participants may under-report CSA, are more susceptible to different traumas not measured by Wessel et al., or follow a rather different pathway to women. Research looking at males and females separately is indicated in the first instance, so that these possibilities can be addressed.

Williams (1996) proposes that overgeneral autobiographical memory is a consequence of childhood trauma and may relate to adult depression. However, it is clear that the relative associations between childhood trauma, autobiographical memory and depression have not yet been firmly established and that more research is required, particularly looking at all three phenomena within the same studies.

Further Evidence to support the proposed models.

Aside from the issue of establishing clearly the relationship between CSA, autobiographical memory and adult depression, the models proposed above can be examined in light of other evidence. Several studies have been reported that are

relevant to the role of autobiographical memory style in adult depression, and these will be outlined below. However, less information is available concerning Williams' proposition about the formation of autobiographical memory style in childhood and so the subsequent section will outline what future studies might fruitfully explore in this area.

Problem Solving

Evidence has been presented which relates problem solving style to autobiographical memory specificity. Evans, Williams, O'Loughlin and Howells (1992) studied problem solving in a group of parasuicidal patients. Problem solving was assessed using the Means End Problem Solving (MEPS, Platt & Spivack, 1975) test, in which participants are presented with vignettes representing problem situations, followed by the resolution of these problems. Participants are required to fill in the gap by describing how the problem may have been solved. They reported that the parasuicidal patients were more overgeneral than a group of controls, as well as generating poorer problem solving solutions. Moreover a positive correlation was reported between specificity of autobiographical memory and the effectiveness of solutions generated. Sidley, Whitaker, Calam and Wells (1997) replicated this study with a larger sample of parasuicidal patients and reported the same significant results. Similar findings were also reported by Goddard, Dritschel and Burton (1996) when comparing a group of clinically depressed patients with hospital controls. However, they also examined memories which were generated by participants while completing the MEPS task and reported that poorer solutions were significantly correlated with

the number of categoric memories retrieved during the procedure. Goddard, Dritschel and Burton (1997) investigated the same phenomena in a group of college students, categorising them as depressed or not depressed based on scores obtained from the Beck Depression Inventory. Significant correlations between problem solving scores and autobiographical memory specificity were reported within the 'depressed' group only.

Although the studies reported above do lend some weight to the proposition that access to specific memories is important in the problem solving process, it is to be remembered that all results are correlational and causality cannot be inferred. There is a danger of searching for data to confirm the hypothesis without considering alternative explanations for the results. This is particularly important in the light of the descriptions of participants' responses given in the study by Goddard et al. (1996). They reported that there were many instances where problems were solved without reference to any sort of memory, and that this absence of memories was not related to the effectiveness of solutions generated. In addition, they described how in the depressed group, the categoric memories often seemed to be descriptions of past failures and not really attempts to solve the problem. The authors suggested that depressed patients may have difficulties in their orientation towards problem situations in general, rather than difficulties in generating effective solutions.

An alternative explanation which may also account for the findings relates more closely to the assimilation model. The assimilation model describes how an overgeneral memory style represents a way of 'warding off' intrusive memories which

are brought to the fore by the prospective memory system as reminders of 'things to be done'. It could be that facing problems (or 'things to be done') also runs the risk of activating the prospective memory system, giving access to unwanted intrusive memories. Avoiding problem solving would therefore feel safer and this would account for difficulties with problem orientation. Although this suggestion places problem solving difficulties more as a symptom of trauma rather than a cause of depression, it is likely that such a style would also lead to more difficulties in life and exacerbate distress. Another implication of this proposal is that for some, the presence of problems would mean a confrontation with unassimilated distressing material and indeed this is consistent with reported associations between negative life events and distress (e.g. Schotte and Clum, 1987).

Evidence relating to intrusive memories and avoidance

The assimilation model, described above, explains how autobiographical memory specificity works to ward off emotionally painful memories and as such can be viewed as a defensive coping strategy. One reason for conceptualising it in this way is that Williams (1996) proposes that autobiographical memory style is a long standing trait of the individual and the assimilation model implies that distress is experienced only when this strategy breaks down.

Of relevance to this part of the assimilation model are studies which have investigated autobiographical memory specificity in relation to intrusive memories. In the study by Kuyken and Brewin (1995), for participants reporting abuse during childhood, the number of overgeneral memories retrieved was related to attempts to

avoid intrusive memories as measured by the Impact of Events Scale (IES, Horowitz, Wilner, & Alvarez, 1979). Similarly, Brewin, Reynolds and Tata (1999) in a study of depressed patients, report that the number of overgeneral memories retrieved was significantly correlated with levels of intrusion, again measured by the IES.

Other information relevant to the conceptualisation of overgeneral autobiographical memory as a coping strategy comes from studies that have looked more closely at their clinical groups. In their study of patients with Borderline Personality Disorder, Startup et al. (2001) report that within this group, the number of reported parasuicidal acts within the previous four months was negatively related to the number of overgeneral memories produced. The authors suggest that overgeneral autobiographical memory style may be protective for some people with this diagnosis. Along the same lines are the results reported from a study of adolescents attending a residential psychiatric service, compared to controls (Swales, Williams & Wood, 2001). Within the clinical group, the number of specific memories recalled was positively correlated with questionnaire measures of depression and hopelessness. Both of these studies imply that although on the whole, the clinical groups possessed a more overgeneral autobiographical memory style, it was the individuals who were least able to maintain this style that were most distressed. This is consistent with the idea of overgenerality being a coping strategy, although evidently not always successful.

Implications for the assumption of stability

Whether or not we accept that generally autobiographical memory specificity is stable, the possibility of autobiographical memory style being a fragile coping strategy goes against the assumption that it is a completely stable trait, as by implication the coping strategy would have begun to fail (and therefore change) at the onset of an episode of depression.

Of particular interest to this point is the finding of Williams and Dritschel (1988) in their report of the stability of autobiographical memory style. Although the former parasuicidal group remained overgeneral after recovery, their pattern of specificity regarding valency of memories became more similar to the control group, so that specific memories were more likely to be recalled in response to positive cue words. This does indeed suggest that subtle changes may take place in autobiographical memory during clinical episodes.

Ideally, stability should be addressed by prospective studies of autobiographical memory, which could attempt to trace autobiographical memory style before, during and after episodes of depression. Indeed nothing is known about the possible effects of an episode of depression on prior autobiographical memory style. Presumably, an episode of depression may be seen as an opportunity to complete successfully the integration of unprocessed information, could remove the need for 'warding off' and so change autobiographical memory style. This would have implications for the direction and goals of clinical practice. Prospective studies of autobiographical memory would help unravel these complexities. Further evidence regarding stability of

autobiographical memory style could also address Williams' (1996) as yet untested suggestion that specificity of autobiographical memory may be a reflection of retrieval being impeded by concurrent mental activity, such as that associated with intrusive memories.

To summarise so far, evidence has been presented consistent with autobiographical memory being related to problem solving style and therefore autobiographical memory simply being a vulnerability factor in the development of depression. However, the processes involving autobiographical memory appear to be more complex and it is possible that it is, to some extent, a defensive coping strategy. Of course, it is conceivable that autobiographical memory could fill *both* roles and a description of how this might work in practice follows . Potentially, overgenerality could ward off distress for a considerable time, but impoverished problem solving style may eventually lead to sufficient difficulties to precipitate an episode of depression. At some point (either just before or just after the onset of depression), the overgeneral strategy begins to fail, opening a floodgate for distressing memories. This may initially increase attempts at overgenerality and avoidance. The assimilation model would suggest though, that if the avoidance is relinquished, although initially painful, the opportunity exists for distressing information to be integrated and the individual to 'move on'.

Suggestions for research relating to the formation of an overgeneral style in childhood

Although a link between CSA and autobiographical memory is indicated, little is known about circumstances surrounding abusive experiences which may be relevant

to the establishment or otherwise of an overgeneral style. Indeed it is not known if all survivors of CSA have overgeneral autobiographical memory, or only a subgroup. The assimilation model leads us to predict circumstances which may be relevant to autobiographical memory and these are outlined below. It is argued that further research in this area is warranted, particularly to guide clinical interventions with children disclosing abuse.

Age

Studies so far have not directly address the proposition by Williams (1996) that overgenerality is a continuation of a style typically held by children younger than four years of age (Healy & Williams, 1999). The studies investigating CSA have all done so by asking retrospectively and it is likely that since retrospective memory for events very early in childhood is poor, that the CSA reported in these studies is mostly from middle to late childhood. It is possible that any association between CSA and overgenerality represents a regression into general recall, rather than the continuation from early childhood. If overgenerality is a continuation, one would expect abuse occurring or starting at a younger age to be more strongly associated with adult overgeneral autobiographical memory.

Severity of Abuse

In the study by Kuyken and Brewin (1994), levels of intrusion and avoidance as measured by the Impact of Events Scale were associated with reported severity of CSA. This suggests that disruption to memory processes in relation to trauma may depend on the severity of that trauma. Intuitively one would expect that severe or

recurrent trauma would require more effortful avoidance. Although there are some inconsistencies, subsequent studies have found relationships between levels of intrusive memories, or avoidance of such memories and overgeneral memory style, including Kuyken and Brewin's (1995) study of depressed patients with a history of childhood abuse. Brewin (1999) suggests that retrieval of overgeneral memories, as measured by the autobiographical memory test, may be the manifestation of attempts to avoid intrusive memories and so overgeneral memory retrieval might also be expected to be greater for those having experienced more severe abuse.

Disclosure

There are theoretical reasons to believe that the disclosure of sexual abuse during childhood might relate to the development of an overgeneral memory style. CSA is often not disclosed, perhaps because of its taboo nature or threats by the perpetrator. The pain paradigm of the assimilation model describes some memories as being inaccessible by verbal means. Memories are more likely to have undergone some processing if they have been verbally expressed to another and so one might expect disclosure of abuse to relate to autobiographical memory, such that those who had disclosed would be more specific.

The investigation of these issues and subsequent memory disturbance is important because of the clinical implications for children who disclose abuse, both at the time and later in adulthood. If appropriate, clinical interventions could be directed at facilitating assimilation of difficult experiences.

Summary

To summarise, although advances have been made in explaining the role of autobiographical memory in the formation of depression following childhood sexual abuse, there are gaps remaining in the research evidence. In particular, the question of the stability of autobiographical memory needs to be addressed more thoroughly and not assumed. The links between autobiographical memory, CSA (and other types of childhood trauma) and depression have yet to be firmly established and further investigated to see if the process is the same for males and females. Long term prospective research could best address these uncertainties, as well as exploring possible links between memory processes and adult trauma or life events.

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Appendix A

Submission guidelines for *Clinical Psychology Review*

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**Autobiographical Memory and Depression in
Survivors of Childhood Sexual Abuse**

Running Title: Autobiographical Memory And Depression In CSA Survivors

Elizabeth Burnside

Proposed additional authors:

Jonathan Hill

Mike Startup

**From The School of Psychology, University of Wales, Bangor; and the Department of
Psychiatry, University of Liverpool.**

**Address for Correspondence: Elizabeth Burnside, NWCPC, School of Psychology,
University of Wales, Bangor, 43 College Road, Bangor, Gwynedd, LL57 2DG.**

Abstract

Background. Overgeneral autobiographical memory (AM) style has been associated with episodes of clinical depression in adults, and also with reported experience of childhood sexual abuse (CSA). It is not known, however, if AM style has a role in the development of adult depression in survivors of CSA and whether it is related to circumstances of CSA.

Methods. Women with a reported history of CSA (n = 41) completed the autobiographical memory test and were interviewed about any adult episodes of depression using the Schedule for Affective Disorders and Schizophrenia - Lifetime. Current depressed mood was assessed using the 13 item Beck Depression Inventory.

Results. Women reporting episodes of adult depression recalled a greater number of specific memories in response to negative cue words (but not to positive or neutral cues) than those not reporting depression. Correlations indicated that low numbers of specific memories recalled for all cue words were associated with early abuse, more severe abuse and greater duration of abuse. There were no differences in numbers of specific memories between those who had and had not disclosed abuse in childhood.

Conclusions. Relationships between AM and age, severity and duration of abuse are consistent with findings reporting a relationship between CSA and AM. Overgeneral AM probably serves as a defense against distressing memories, but the stability of AM style is questioned and longitudinal research is required to address this.

Autobiographical Memory and Depression in Survivors of Childhood Sexual Abuse. Williams and Broadbent (1986), studied autobiographical memory in a sample of people who had recently taken a deliberate overdose. Their aim was to examine differences in times taken to recall personal memories in response to positively and negatively valenced cue words. The overdose group were slower to retrieve memories to positive cue words than controls, but the authors reported that this was largely because of their tendency to report memories which were inappropriately general. Although the task required participants to recall memories of specific events from their lives, the clinical group were more likely to give non - specific responses, such as 'when I lived in London' or 'walking on the beach'.

This finding has been replicated in studies of other clinical groups, including patients during an episode of major depression (e.g. Williams & Scott, 1988, Kuyken & Dalgleish, 1995), Obsessive-Compulsive Disorder (Wilhelm *et al.*, 1997), Post Natal Depression (Croll & Bryant, 2000) Post Traumatic Stress Disorder (McNally *et al.*, 1994) and Borderline Personality Disorder (Jones *et al.*, 1999).

Although findings from studies of clinical groups have been consistent, the meaning of such findings is not so clear and in particular whether autobiographical memory style has any causal role in the development of depression. This was addressed by Williams (1996), who proposed that specificity of autobiographical memory is related to childhood experiences, in a way which may help explain the link between childhood adversities and adult psychopathology. Williams described how all young children tend to recall personal memories in a general way, and that specificity develops with age. He suggested that for some children this natural development towards specificity may be interrupted by negative experiences and that children may retain their tendency to recall general memories as a way of regulating affect associated with painful memories of traumatic events. It was suggested that this memory style then increases vulnerability to depression through problem solving ability, as difficulty in accessing

specific memories may result in a poor repertoire of successful problem solving events to draw on in order to help generate solutions for new problems. Evidence has been reported supporting the proposed link between overgeneral autobiographical memory and poor problem solving style (Evans *et al.*, 1992; Goddard *et al.*, 1997; Sidley *et al.*, 1997).

From a slightly different perspective, Williams *et al.*, (1999) place autobiographical memory within the assimilation model of emotional processing of difficult experiences. They suggest that autobiographical memory is used to 'ward off' painful or dangerous memories, but that this prevents assimilation of the emotionally difficult material. It is suggested that overgeneral autobiographical memory is used to ward off intrusive memories which occur during episodes of depression, and are representative of the early stages of assimilation. Indeed relationships have been reported between autobiographical memory specificity and measures of intrusion and avoidance in clinical groups (Kuyken & Brewin, 1995; Brewin *et al.*, 1999).

These two explanations of autobiographical memory offer potentially different predictions about autobiographical memory within a sample of participants who are known to have experienced childhood trauma. Although both would suggest that such a group would, on the whole, possess an over general autobiographical memory style, the first, with the emphasis on problem solving, implies that greater overgenerality is associated with greater depression. The second, however, suggests that depression occurs when the warding off strategy begins to fail and one might expect trauma survivors who had become depressed to be *less* overgeneral than non-depressed trauma survivors. In this respect, overgeneral autobiographical memory could be conceptualised as a protective mechanism.

Relevant to this, Startup *et al.* (2001) found that although their sample of patients with a diagnosis of borderline personality disorder were less specific than controls, within the clinical sample, the number of reported recent parasuicidal acts was

negatively correlated with the number of overgeneral memories produced. Thus although the clinical group as a whole possessed a more overgeneral autobiographical memory style, the individuals least able to maintain this style were the most distressed.

Evidence of autobiographical memory as a consequence of childhood trauma

Evidence to support the proposition that autobiographical memory is related to childhood experiences was first reported by Kuyken and Brewin (1995). They studied a sample of depressed women and reported that, within this depressed group, those who reported experiencing CSA gave more overgeneral responses to the autobiographical memory test than those without CSA. There was not the same association between autobiographical memory style and other reported childhood experiences such as neglect or physical abuse.

Henderson *et al.* (2000) provided evidence that autobiographical memory style is associated with reported experience of childhood sexual abuse in a non - clinical sample. Female students completed the autobiographical memory test and also a questionnaire about experiences of CSA. Those reporting CSA gave a significantly greater proportion of overgeneral responses to the autobiographical memory task.

Contrary to this however, Wessel *et al.*, (2001) looked at autobiographical memory performance and reported childhood trauma in a sample of patients with anxiety disorder and/or major depression along with controls. They reported that only educational level and a diagnosis of current major depression predicted autobiographical memory performance. They also acknowledged however, that only a small proportion of their sample reported any childhood trauma (which included indices of neglect) and so presumably an even smaller number reported CSA, perhaps too few to reveal any statistical relationship.

The relationship between autobiographical memory and childhood trauma has further implications for the meaning that should be attributed to relationships reported between autobiographical memory and depression. Consistent associations have been

found between membership of a clinical group and overgeneral autobiographical memories, but no studies have directly addressed the question of causality. Although depressed people are more general in their retrieval style, there remains the possibility that this association is due to some underlying factor related to both depression and memory style. The findings from Kuyken and Brewin's (1995) study illustrates this point well. Although all participants in their study were depressed, those reporting CSA responded with more overgeneral memories than those without CSA. Since no control group was employed, we cannot tell if those depressed but not reporting CSA were still more general in their responses than a non-clinical group would be.

It is possible then, that overgeneral memory style is associated with childhood trauma and is found in clinical groups simply because people with such experiences are likely to be over-represented in those groups, without memory style necessarily causing the disorders. On the other hand, it may be that the link between childhood trauma and adult depression is partly dependent on autobiographical memory style, as proposed by the models outlined above.

This study aims to address the above issues by investigating a community sample of women, all of whom reported having experienced sexual abuse in childhood. If the relationship between autobiographical memory and depression is simply a reflection of increased numbers of childhood trauma survivors within clinical groups, then one would expect no difference in memory style between those who had ever or never been depressed. Alternatively, if autobiographical memory is an important mechanism in the link between trauma and adult depression, then one would expect that of these women, those also reporting adult depression would produce different levels of specific responses to the autobiographical memory test to those without a history of depression. If those reporting depression are less specific, this lends weight to the proposition that problem solving is the most important pathway through which autobiographical memory is of influence. If however, this group is more specific, then overgeneral

autobiographical memory may be seen more importantly as a protective device following traumatic experiences.

Circumstances of Abuse

This study also affords the opportunity to address issues concerning the circumstances surrounding the abusive experience and autobiographical memory style.

Age

Williams' (1996) suggestion that overgeneral autobiographical memory style represents arrested development of specificity would lead us to predict that people who had experienced abuse at an early age would be more likely to give non-specific responses, as is typical of younger children.

Severity

Severity of abuse as indexed by the threatfulness of incidents and also the duration of abuse, may also be expected to relate to autobiographical memory style. If overgenerality is a way of warding off memories of trauma, then one might expect those who have experienced 'more' trauma (both qualitatively and quantitatively) to be more reliant on this style. Relationships between severity and memory disturbance are reported by Kuyken and Brewin (1994). Their study found that levels of intrusion and avoidance of traumatic memories were associated with reported severity of CSA.

Disclosure

The assimilation model, as described by Williams et al. (1999), gives us theoretical reasons to believe that disclosing sexual abuse during childhood may be associated with greater specificity in adulthood. According to the model, overgenerality is a tool for warding off unassimilated material. The model also suggests that assimilation may be hampered by an individual's reluctance or fear of verbalising the information.

Following from this, one would expect that those who had been able to talk about the experience would be more likely to have assimilated the material and therefore less likely to be dependent on the protection of an overgeneral memory style.

Method

Participants

Fifty women were identified who had previously taken part in a research project investigating the relationship between childhood experiences and adult functioning (see Hill *et al.*, in press). This study utilised a general population sample which were recruited initially by screening questionnaires sent to participants via their GP surgery. A sub-sample of these had been contacted and interviewed about both childhood and adult experiences. All 50 women selected for the present study had reported sexual abuse as children as part of the original research project. The women identified had last been interviewed between two and five years before the commencement of the present study.

Where possible, women were first contacted by telephone and asked if they wished to take part in the study. Where telephone numbers were no longer correct, directory enquiry service was used to find new telephone numbers. Where no number was listed, primary care practices, from which women had originally been recruited, were asked to provide new addresses. Women at new addresses and those who had been listed as ex-directory were contacted by letter outlining a date and time when a researcher would visit to tell them about the project.

Forty three (86%) of the 50 women were traced and invited to take part and 41 (95%) of these consented. The age of participants at the time of the present study ranged between 31 and 41 (mean = 36.74 , s.d. = 2.93)

Measures

Data used for statistical analyses were derived from measures taken both during the original and the present study.

Measures from original study

Childhood Experience

Recalled childhood experiences were measured using the Childhood Experience of Care and Abuse (CECA) interview schedule (Bifulco *et al.*, 1994), which asks participants to recall and give examples of both positive and negative childhood experiences. These include affection, companionship, instrumental and emotional neglect, physical abuse and sexual abuse. Details of all instances of sexual abuse were obtained including severity of offence (ranging from 1 = “markedly severe”, 2 = “moderately severe” to 3 = “somewhat severe”), frequency, duration and age of participant at the time of abuse. Researchers were trained by the principal author of the measure, who was also available to advise on difficult ratings. In addition to the CECA measure, details of any disclosure about the abuse during childhood were recorded.

Adult Depression

The Schedule for Affective Disorders and Schizophrenia-Lifetime version (SADS-L, Spitzer and Endicott, 1975) yielded information about depression during adulthood. The measure was adapted to assess for any episode of DSM-IV major depression which may have occurred since age 16. Number of episodes, age at onset of each episode and duration of episodes were recorded. A sub-sample of 20 audiotaped interviews was selected to establish reliability between raters for diagnosis of an episode (Kappa = 0.91).

Measures used at follow-up**Autobiographical Memory Test**

Participants were asked to recall specific events from their own lives in response to cue words, which were presented to them, one at a time, on cue cards. A time limit of 30 seconds was allowed for responses to be made. Where non-specific responses were first given, participants were prompted again to think of a specific event, but raw scores represented the type of memory given as a first response, before any additional prompt. A response was considered specific if it detailed an event which lasted for less than one day. Non-specific responses were those which consisted of a class of multiple events (e.g. 'I used to walk the dog every day'), events which lasted for more than one day, or memories of a person or place with no reference to a particular event. A response was recorded as an omission where no memory was recalled before the thirty second time limit

Five positive (Happy, Relieved, Eager, Sunny, Proud), five negative (Ugly, Guilty, Failure, Worse, Hopeless) and five neutral (Grass, Gigantic, Absence, Bread, Search) cue words were used, which were arranged randomly but presented in the same order to each participant. Prior to formal testing, three practice words were presented to each participant. Where non-specific responses were given to practice words, sufficient prompts were provided until the researcher was satisfied that the participant understood the requirements of the task.

All participants were audiotaped while carrying out the task. Complete responses from 10 participants were scored by a second rater. Inter-rater agreement on specific versus non-specific memories was established ($Kappa = .84$).

13 item Beck Depression Inventory (Beck, Rial and Rickets, 1974)

The shortened version of the Beck Depression Inventory was used to assess for symptoms of depression. This is a 13 item self report measure. For each item

respondents are asked to choose which of four statements best describes themselves, the four statements reflecting increasing levels of severity of a symptom. Item scores are totalled to produce an overall score.

Depression

The depression section of the SADS -L, described earlier, was re-administered to determine the occurrence of any episodes of major depression since the time of the original study.

Procedure

The autobiographical memory test was administered first in order to prevent other measures affecting memory process. Following the AMT, participants were asked about depression using the SADS-L depression section, and finally the BDI was administered. The time taken to administer the measures ranged between 45 minutes and two hours.

Results

On interview, 12 participants reported having experienced an episode which fulfilled DSM-IV criteria for major depression since the time they had taken part in the original study. This brought the total number of women who reported ever experiencing an episode of depression to 22 and those who did not to 19. Four of the participants reported symptoms which fulfilled DSM-IV criteria for major depression at the time of interview.

There was no significant difference in age between the ever and never depressed groups (means = 35.8 and 37.5 respectively, $t(39) = -1.89$, $p = .066$). Academic achievement was rated according to the highest academic qualifications attained by participants.

There were no significant differences between groups on this measure.

The ever depressed group reported higher levels of depression as measured by the BDI than those who had never been depressed (mean scores = 6.79 & 3.89 respectively), however this difference was not significant. ($t(36) = -1.63$, $p = .11$)

Autobiographical Memory

Specificity scores were computed as the total number of specific responses given to cue words. Specificity was also broken down according to type of cue word giving totals for positive, negative and neutral cues. Total specificity, specificity to positive cue words, negative cue words and neutral cue words were normally distributed within both the ever and never depressed groups and across the sample as a whole. Table 1 shows autobiographical memory test means and standard deviations for the two groups and the total sample.

Differences between the ever and never depressed groups in numbers of specific responses given to negative, positive and neutral cue words were examined in a Profile Analysis. Since current depression has previously been associated with performance on the autobiographical memory test and four members of the ever depressed group currently fulfilled criteria for DSM-IV major depression, current major depressive episode was entered as a covariate.

The levels test indicated no significant multivariate difference between the two groups ($F(1,38) = 3.44$, $p = .072$). When averaged across groups, valence was found to deviate significantly from flatness ($F(2, 38) = 12.66$, $p < .001$) indicating a main effect for valence of cue word. The profiles for the groups deviated significantly from

parallelism ($F(2, 38) = 6.16, p = .005$) indicating a significant group x valence interaction.

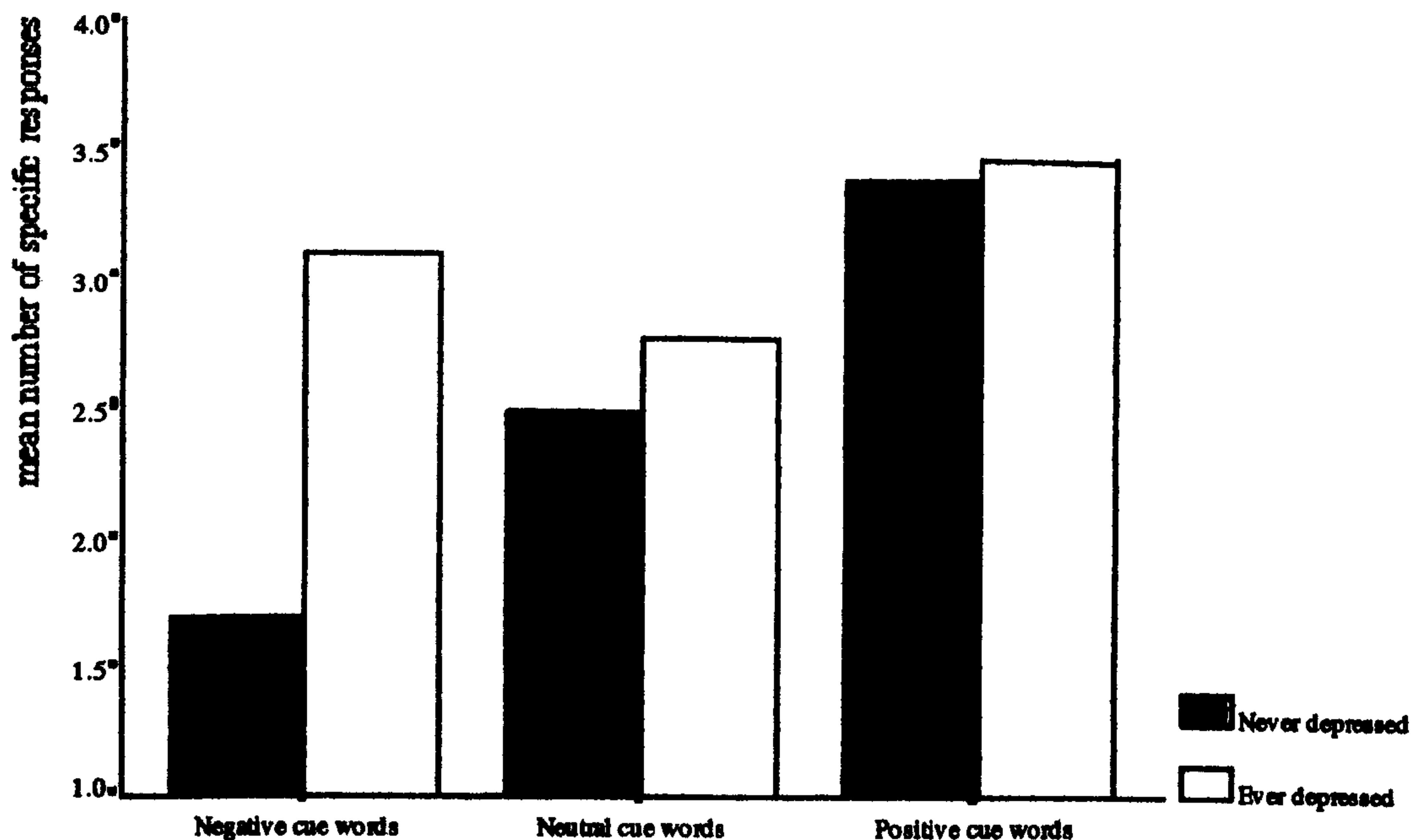
Table 1. Mean number of specific responses (standard deviations) for the two groups and combined for the whole sample.

	total	positive cues	neutral cues	negative cues
Never depressed	7.53 (3.41)	3.37 (1.34)	2.47 (1.39)	1.68 (1.45)
Ever depressed	9.32 (2.83)	3.45 (1.22)	2.77 (1.19)	3.09 (1.15)
Whole sample	8.49 (3.20)	3.41 (1.26)	2.63 (1.28)	2.44 (1.45)

Post-hoc paired t-tests for the whole sample were used to investigate the main effect for valence, indicated by the test of flatness. Significant differences were found between number of specific responses given to positive and negative cue words ($t(40) = -4.29, p < .001$) and positive and neutral cue words ($t(40) = -3.65, p = .001$). There was no difference between the number of specific responses given to neutral and negative cue words.

Post hoc simple effects analysis of parallelism indicated that there was a significant difference between the two groups in their responses to negative cue words, the ever depressed group giving more specific responses than the never depressed group ($F = 11.93, p = .001$). There were however, no significant differences between groups in their number of specific responses to neutral and positive cue words. (see fig. 1)

Figure 1. Mean number of specific responses to cue words for ever and never depressed groups



Circumstances of Abuse

Analyses concerning circumstances of abuse were undertaken using the sample as a whole. Table 2 shows zero order correlations and one tailed probability values between total specificity and the abuse variables.

A multiple regression analysis was performed to assess the relative strength of relationships between total number of specific memories recalled (across all cue words) and reported age at abuse, severity of abuse and duration of abuse (measured in months). Since previous research has shown current depression to be related to autobiographical memory specificity, diagnosis of current major depression was entered in the first step, with the abuse variables entered together in the second step. The final equation gave a value for R which was significantly different from zero, $R^2 = .236$, $F(4, 36) = 2.77$, $p = .042$.

Table 2. Zero order inter-correlations between abuse variables and total specificity scores.

	Age at abuse	Duration of abuse	Abuse severity
Specificity	.31*	-.42**	.28*
Age at abuse		-.35*	.25
Abuse Duration			-.39**

Specificity, Total number of specific responses on Autobiographical Memory Test, **Abuse severity**, CECA threatfulness rating for most severe incident of abuse, where a lower score indicates greater severity.

* $p < 0.05$ one - tailed

** $p < 0.01$ one - tailed

In the first step, with current depression only entered, R was not significantly different from zero. $R^2 = .0007$, $F(1, 39) = .023$, $p = .866$. However, the addition to the equation of age at abuse, severity of abuse and duration of abuse, resulted in a significant change in R^2 (.235). Table 3 shows statistics from the final equation for each of the independent variables. Since correlations for age, duration and severity occurred in the predicted direction, one tailed significance levels are shown.

Table 3. Partial correlations, t values and probability values for each of the independent variables

Variable	Partial Correlation	t	p
Current depression	.11	.67	.50
Age at abuse	.17	1.05	.15 (one tailed)
Duration of Abuse	-.30	-1.9	.03 (one tailed)
Severity of Abuse	.16	.97	.17 (one tailed)

Disclosure

Of the 41 participants, 25 had disclosed abuse to another during childhood (before age 16). Table 4 shows the autobiographical memory specificity score means and standard deviations for the two groups.

Table 4. Mean number of specific responses (standard deviations) for participants who did and did not disclose abuse during childhood.

	total	positive cues	neutral cues	negative cues
Disclosure	8.08 (3.07)	3.36 (1.32)	2.28 (1.21)	2.44 (1.29)
No disclosure	9.13 (3.40)	3.50 (1.21)	3.19 (1.22)	2.44 (1.75)

Profile analysis was used to examine specificity scores for the three types of cue words in relation to whether or not abuse had been disclosed during childhood. The levels test indicated no significant multivariate difference between the two groups ($F(1,39) = 1.04, p = .314$). The test for parallelism indicated no significant interaction between valence of cue word and disclosure ($F(2,38) = 38.00, p = .074$). Again, valence of cue word deviated significantly from flatness ($F(2, 38) = 9.19, p = .001$).

Discussion

Overall, there was no difference between the two groups in the number of specific memories retrieved. However, participants reporting episodes of depression did give significantly higher numbers of specific responses to negative cue words. This is in

keeping with the proposition that overgeneral memory is related to the development of depression following childhood trauma, but implies that overgeneral autobiographical memory is more importantly a protective factor against distressing memories, rather than a vulnerability factor, as suggested by the problem solving model. These results appear to be contradictory to the many studies reporting lower specificity among depressed groups and possible explanations for this will be discussed. Limitations of the research design, however, affect the extent to which conclusions can be drawn. In particular, the data are largely dependent on retrospective accounts from participants. It is possible that women who have difficulty in recalling negative events are more likely to under-report episodes of depression and therefore be placed erroneously in the 'never depressed' group.

For the sample as a whole, a greater number of specific responses were given to positive cues than both negative and neutral cues. Although some of this effect is probably a reflection of the significantly lower specificity scores for the never depressed group to negative cues, this does not explain the overall difference between scores for positive and neutral cues. Previous studies have shown no clear pattern in the relative specificity to differently valenced cues and so the most meaningful comparisons are made by looking at studies which have utilised similar non-clinical samples of trauma survivors. Henderson et al. (2000) do not report effects for valence within their student CSA survivor sample. McNally et al. (1994), however, report that their non-PTSD group of combat veterans were also significantly more specific to positive than negative cues. Taken together, these results suggest that this pattern of relatively greater specificity for positive memories may be a general response to trauma, but further studies making comparisons with non-traumatised control groups would be required to confirm this suggestion.

Analysis of autobiographical memory performance in relation to age, severity and duration of abuse indicated that all three were significantly correlated with the total number of specific responses given across cue words, such that lower numbers of

specific responses were given by those who experienced more severe abuse, at a younger age or over a longer duration. These three variables relating to the circumstances of the abuse were themselves highly inter-correlated and so their relative contributions to total specificity scores were analysed in a multiple regression. The regression analysis indicated that duration of abuse was the strongest predictor of specificity. This suggests that an important factor in the maintenance of an overgeneral style may be a greater need to depend on it over time, because of repeated traumatic incidents. Williams (1996) and Healy and Williams (1999) have suggested that overgenerality in adulthood is reflective of the maintenance of a generic memory style, typical of children younger than four years, due to negative events occurring within that time. Although results from this study do not suggest that *early* abuse is one of the most important factors in the prediction of autobiographical memory style, the retrospective nature of the study again limits the conclusions that can be drawn. It is possible that some instances of abuse that had occurred at a very young age will not have been remembered by participants.

Although there were no overall differences in specificity between those who did and did not disclose abuse during childhood, the interaction term did approach significance. Mean values suggest that the greatest discrepancy is in response to neutral cue words, the group that disclosed giving less specific responses than those who did not. If reliable, this difference is in the opposite direction to that predicted. Further investigation including details about the extent of disclosure and any response to it, may clarify its role in the development of autobiographical memory style.

If we accept recall of depressive episodes as accurate, the results concerning the difference between the ever and never depressed groups do not fit easily into the picture we already have about autobiographical memory and clinical groups. Previous research has consistently found depressed participants to be less specific in autobiographical recall than control groups. In the current study, women reporting having experienced

major depression during adulthood were *more* specific to negative cue words than their never depressed counterparts. Two possible explanations for this finding are proposed. Firstly, the ever depressed group, while being more specific than their never depressed counterparts, may still be less specific than the general population. One shortcoming of this study is the absence of a non-CSA control group with which to make this comparison. It is, useful then, to compare results from this study with mean values for a control sample from another study. The autobiographical memory test procedure utilised by Williams and Dritschel (1988) most closely resembles that of the current study. Mean numbers of specific responses for their control group (pro-rated from 10 to 5 cue words) are 3.65 for positive cues and 3.35 for negative cues. These values are higher than all from the current study, which is consistent with the proposition that overgeneral autobiographical memory is a consequence of childhood trauma (Kuyken and Brewin, 1995, Henderson *et al.* 2000). The only striking contrast however, is with the never depressed group mean for negative cues (1.68), the implication being that the difference between the two groups is due to the non-depressed trauma survivors who are unusually non-specific, rather than the formerly depressed group being unusually specific. However, without statistical comparison with a data set from a non-CSA control sample, conclusions can only be speculative.

The second possibility concerns the assumption that autobiographical memory style is a stable trait. If autobiographical memory style is stable, then the implication is that it is performed in the same way as clinical groups from other studies. The assimilation model, however, gives us reason to suspect that the experience of an episode of depression has the potential to alter autobiographical memory style. The model describes how intrusive memories occurring during depression are a manifestation of unprocessed material which needs to be assimilated into existing schema. Overgeneral autobiographical memory is used in the early stages to ward off this personal

information, but later stages involve the information entering awareness, being subject to clarification and eventual integration. This would suggest a modification of the defensive autobiographical memory style as material is worked through. Relevant to this, in an unpublished study, Dritschel *et al.*, (1991) found decreasing numbers of categoric memories to be produced over the course of therapy (measured in spontaneous discourse), and that the change in memory correlated with change in participants' scores on the Beck Depression Inventory. Similarly, Williams *et al.* (2000) report that recovered-depressed participants recalled fewer categoric (general) memories following mindfulness-based cognitive therapy. In the current study, had those women reporting an episode of major depression been tested before such an episode, it is possible that they too would have been less specific than they were when tested subsequently.

This possibility appears to be contrary to studies reporting that memory remains overgeneral even after depression has remitted. However, these studies have followed up patients after a relatively short period of time. In the longest, Mackinger *et al.*, (2000) tested formerly depressed women between one month and five years after their clinical episode. Figures are not given to show the proportion of women tested soon after depression rather than later, but eight (of twenty one) of this group were still taking antidepressant medication. It is suggested that greater changes may be evident if patients were re-tested at a time temporally distant to the episode of depression. Relevant to this, Kuyken and Dalgleish (1995) compared autobiographical memory within a control group, between those with and without a reported history of depression, and found no differences.

The current study sheds some light on the role of autobiographical memory as a protective device following trauma, but raises further questions about its stability throughout the lifespan, particularly for individuals who do become depressed. The results of this study represent a 'snapshot' of participants' memory styles in relation to their experiences so far. We do not know, for example, how many of the never

depressed group may experience depression in the future. These questions would be more fruitfully addressed by long term longitudinal research, particularly documenting autobiographical memory style in trauma survivors and controls before, during and after episodes of depression.

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Appendix A

Submission guidelines for Psychological Medicine

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Critical Review of the Large Scale Research Project

Elizabeth Burnside

Critical Review of the Large Scale Research Project

Now that I have almost finished writing up, looking back and reviewing the process, I can hardly believe I've done all this work. Had I realised at the start just how much there was to be done, I would have felt very overwhelmed.

It seems that the easiest way to review the project (like doing it) is to start from the beginning and tackle one stage at a time. In doing so I hope not only to describe the development of the work from idea to the finished project, but to reflect on my experience as a researcher, the things that helped, the difficulties that had to be overcome, sources of inspiration and revelations about both myself and my research.

Developing the idea for the project

As is probably the case with many trainee research projects, the final proposal and plan came about after several months wavering between ideas and areas of interest. My undergraduate dissertation (10 years ago!) had looked at changes in specificity of autobiographical memory (AM) during the course of therapy. Spontaneous autobiographical memories were rated within transcripts and the depressed participants produced more specific memories towards the end of therapy than they did at the beginning.

For four years of the time between graduating and starting the clinical psychology training course, I had worked on a project examining childhood experiences in relation to adult functioning and psychopathology, with particular reference to childhood sexual abuse (CSA). About half way through this project, the project grant-holder also became interested in the work relating to AM. This was around the time that literature in this area had turned towards childhood experience and particularly CSA. As I also had an interest and some knowledge of AM, the project team decided to include the autobiographical memory test as part of our battery of measures. The project as a whole offered opportunities for papers to be written on many topics and so it was agreed that AM would be my area of interest and I would write a paper on this.

In meetings with the grant-holder, we looked at the data we had so far. We were interested to find that specificity of AM within our sample was related only to CSA, of all the measures of childhood experience. It was at this point that I wondered if this finding had any implications for the previous research into AM specificity and clinical groups - could those results be explained by a higher proportion of abuse survivors being present in clinical groups? We looked again at the data and found that once CSA was taken into account, there was no longer an association between adult depression and autobiographical memory. This was really exciting. The only disappointing aspect of this was that within the CSA survivors group, there were not enough participants to divide again into ever and never depressed in order to see if AM style mediated the link between CSA and depression (which would preserve some relationship between AM and depression). Although this was an obvious gap in our research, the lightbulb didn't go on until some weeks later in a meeting with my supervisor about possible research projects relating to autobiographical memory, when I realised that this was something I could look at further.

My supervisor was extremely good at helping me think through the different options. The difficulty with trying to examine this issue was that for the purpose of the Clinical Training Course, my project needed to be a reasonably stand alone, independent study. Thinking around this I remembered the participants from the first half of the study, who had not completed the autobiographical memory test. It was agreed that if there were enough women from this half of the sample who had experienced CSA, my project could go ahead. It was planned that I would also look at the relationship between dissociation and AM, by administering the Dissociative Experiences Scale (DES)

Obtaining ethical approval for me turned out to be not too bad. After slight alterations I was given approval by the university ethics committee. The project I had worked for already had ethical approval in place with the local Health Authority to revisit participants to administer the measures that I planned to use.

Getting Started-Collecting Data

Being supported

I was very lucky in having lots of support from my former colleagues in drawing up a list of potential participants, tracking down those who'd moved and throughout the project with various pieces of information that I would suddenly realise I needed but did not have.

The participants too, were extremely welcoming. I remembered most of them and although at first I was a little apprehensive about contacting them after so long, the majority were more than happy to help. I enjoyed catching up with people, but was also quite moved by this experience. I can only explain it as being like bumping into an old friend that you've lost touch with, but forty one times! Things had happened to most people - had children, met new partners, left partners, lost parents and so on. For some life had got better and for others it was worse. It was impossible not to look at the passage of my own life over the same time period. Most participants looked and seemed older and I realised I must too.

It seems to me that as one becomes more experienced and skilled in research, the less likely one is to actually meet the people being researched- that job being left to research assistants - but what an opportunity missed! While carrying out this project, meeting and speaking to research participants informed my thinking, helped me develop ideas and question assumptions.

As an example, one woman, in chatting about the research after completing the measures, told me how she has learned to ignore stresses in her life, which she is able to do to a point. She described this tendency as not deliberate but more 'automatic' and said that when she encounters a problem, she tends to shut off and is unable to think at all. However, when 'big' problems occur she can no longer sustain this way of coping and she can become very upset, even suicidal. Moreover, at these times she also remembers painful episodes from her past, unrelated to the current issue.

In many ways this participant's description fitted well into the pain model of intrusive memories, which was encouraging. For me it also raised questions about

where problem solving fitted in, and gave me ideas for the literature review. This woman seemed to be describing a difficulty with problem solving not because she didn't have a repertoire of previous examples to draw on, but rather that the presence of a problem itself seemed to activate her avoidant coping style. I was reminded again of the pain model, which suggests that intrusive memories occur because they are reminders of 'unfinished business', in the same way that one automatically reminds oneself to deal with other problems. If problems and unintegrated memories are stored in the system, then it is possible that problem solving and memory difficulties are related because to consider problems also means to consider these painful memories. In terms of future research, this story also highlighted the importance of considering life events, as the breakdown of the avoidant style seemed to be triggered by these.

The clear account provided by this participant also reminded me of the value of qualitative research, especially to confirm or challenge the findings from quantitative studies.

But, being alone

Although I was given lots of support from many sources, the process of carrying out an LSRP is inevitably at times a lonely one. Like running a long race, there were plenty of people to cheer me on as I set off and to help me pull it together in the last few miles, but the actual 'doing' of it was up to me. This was quite a learning experience for me. I had been a researcher before and expected I would be quite familiar with it all, but in previous jobs I had always been part of a research team and never the person in ultimate control. This time of course, no-one knew the project as I did and I began to realise that, for a while, I would be the only person who would remember exactly what the project was about. I owned it and I had to look after it! On occasions before I even began to collect data, plans for other follow ups from the original study threatened the viability of my project. I had to defend my research and negotiate around difficulties. These responsibilities for research were new to me and I was pleased that my project and I survived them unscathed, with working relationships still intact too!

Reading, thinking & writing - the literature review

In a sense, generating an idea for a project had been easier because of my fairly unrefined understanding of AM research at that stage. When I began to read around the topic further, in order to write the literature review, it became clear that a lot more work had been done in the area in the previous 10 years than I had realised. Although this did not threaten the integrity of my project I began to feel that I was reading about and experiencing these psychological processes at the same time. Assimilating the information I was reading became really hard work and yet I did feel a great need to make sense of it all, make it all fit in. This led to times of sitting around with my head in my hands, thinking and thinking. I found it difficult sometimes to put the literature out of my mind. I do not mean to sound flippant in comparing my experience with that of people trying to make sense of traumatic memories and it is perhaps informative to point out the differences. When I wasn't able to put thoughts out of my mind, it was really more to do with a fear that if I stopped thinking I would forget it all, lose my grasp of it. This, I assume, was my process of normal, uninterrupted assimilation of difficult, but not painful material.

The reading and making sense of it all was definitely the hardest part. As I read I felt that several features of AM which I had taken to be well established, were actually still quite questionable. This upset my 'autobiographical memory' schema considerably and I had to work hard before I could develop another in which all these uncertainties could sit comfortably. Inevitably, this also made me aware of some limitations of my research which I had not previously considered.

When the project was first planned, the link between overgeneral AM and CSA seemed to be fairly clear; then the Wessel, Meeren, Peeters, Arntz and Merckelbach. (2001) paper was published, which threw this assumption back into the realms of uncertainty. I began to feel that my project was going one step ahead without checking this issue out first. I too had planned a project looking at only 2 of the 3 crucial variables (CSA, AM & depression). I wished I had a control group but it was too late to

enlist one, the best I could do was to compare scores from my sample with those of someone else's control group in the discussion section of the research paper.

The second problem arose when I started to question the stability of AM style. I had thought that looking at formerly depressed women was equivalent to looking at a current clinical group. Reading the information on stability, but particularly the piece of information hidden in the Kuyken and Dalgleish (1995) paper (that their formerly depressed controls were no different to their never depressed controls) made me think that this was not necessarily so. All I could do really was to think about this and incorporate it, especially in relation to how my data looked. The project would have been able to better address this issue though, if there had been a greater number of participants currently depressed. Because of this issue, I would be very interested to do research in the future investigating autobiographical memory longitudinally, but particularly to look in some detail at any changes in AM within an episode of depression. I believe that this information is potentially quite crucial in terms of clinical practice. As a profession, I feel psychologists could be better informed about how to manage clients' memories and shifting schemas at different times during the therapeutic process, especially for those in acute distress.

Another potential weakness of the study was a peculiarity of my sample. The participants had already taken part in a research project, where they described some important life experiences in detail. This in itself could have affected the assimilation processes of the participants and, one could argue, may have affected my results.

I mention in the discussion section of the research paper that it could be argued that the never depressed group may be under-reporting episodes of depression. My own impression though, is that this is unlikely to be the case. While carrying out the interviews, the majority of participants responded positively to the screening question from the SADS-L depression section, which asks if they have had a time when they felt depressed or down in the dumps. On responding to the rest of the interview section though, many of the participants experiences did not meet diagnostic criteria for major

depression. It seemed then, if anything, participants in general were more likely to over-report episodes of distress than they were to dismiss them.

Strengths of the study

Although there are limitations, the study design has several strengths. In some ways, things that appeared to be problems can also be viewed as strengths. Having realised that the stability of AM outside of an episode of depression was questionable, I was able to consider this issue further because of the use of a general population sample. On the one hand, stability from childhood is suggested because the never depressed group appear to be less specific than another control sample and AM style is related to features of the abuse experience. This implies that there are enduring effects of CSA on AM. However, the fact that those who have experienced an episode of depression are more specific, implies that in the long term, autobiographical memory has the capacity to change.

The study was similar to that of Henderson, Hargreaves, Gregory and Williams (2000) in being able to look at AM in CSA survivors using a non-clinical sample. However, the advantages of this project were that I was able to use the standard, verbal autobiographical memory test, rather than the written version, a detailed interview measure of CSA was used and I also had information relating to lifetime episodes of depression, rated by DSM-IV diagnostic criteria.

Data analysis

Bringing home the data was like the end of the race, where my supervisor was there to meet me and help me through the last few miles. I was closely guided and helped to decide which tests to use to look at the data, without simply being told how to do it. I was reasonably OK at basic statistics, but feel I learned a lot more in a short space of time (I even bought a statistics book and found myself reading it out of interest!). I think this has given me the confidence though, to think that if I need to know more in the future I will probably be able to find out and understand.

Supervision at this stage really helped me maintain enthusiasm for the research. My supervisor was very interested in the topic, in the data and in listening to my thoughts.

What happened to the DES?

Although there's no trace of it now, the Dissociative Experiences Scale was part of my project right up until the end. I had written about dissociation in the literature review, analysed the data and included it in the results section. I made the decision to leave it out when I was writing the introduction to the research paper. The DES just didn't 'fit' easily into the introduction and would have required more writing to introduce its significance properly. This was not really possible because of the word limit. Even if I had, I felt that it would have appeared to be 'added on'.

And finally...

To summarise, I'd like to recap on the process and how I managed to keep going. As I said at the start, if I'd stopped to think too long about how much there was to do, carrying on would have been harder, like looking down when half way up a tall ladder.

Obviously, the fact that there was a big deadline looming at the end of it all was a big factor, and to miss it would have not just messed up the project but the last three years work as well. But, fear alone would not have been much of a motivator and the whole process was made much easier by the comradeship of my fellow trainees. In the last three years we've been through many challenges together and work well as a group. E-

mail support is very effective and I use it as a reward for achieving small goals throughout the day, there's usually someone else out there working hard too. On the subject of rewards, I also have to mention 'Coronation Street', a reward of half an hour of mindlessness at the end of a day's work. The whole process has also been made easier by my family, who have fitted in to my schedules for the whole duration of the course, without complaint or pressure, but dependable support.

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Correlates of autobiographical memory specificity: the role of depression, anxiety and childhood trauma. *Behaviour Research and Therapy*, 39, 409-421.

Appendix A

Word count for components of thesis

Word Counts

Title	13
Abstract	280
Ethics Proposal	2096 excluding references and appendices
Literature Review	5000 excluding references
Research Paper	4903 excluding references, figures and tables
Critical Review	2976 excluding references
Total of the above	15 268
References, figures, tables and other appendices	3852