

**Bangor University**

## **DOCTOR OF PHILOSOPHY**

### **Autobiographical memory, emotional intelligence, emotion focusing and depression in children**

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Autobiographical memory, emotional intelligence, emotion focusing and  
depression in children

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## CONTENTS

	Page
Abstract.....	I
Declarations.....	II

### SECTION ONE – ETHICS PROPOSAL

Ethics Proposal.....	1
Appendix A Measures used in proposed study.....	15
Appendix B Information sheets and consent forms.....	22
Appendix C Letter confirming ethical approval.....	25
Appendix D Protocol changes and confirmation of changes.....	28

### SECTION TWO – LITERATURE REVIEW

Title page.....	1
Abstract.....	2
Literature review.....	3
References.....	26
Appendix A: Notes for contributors.....	37

## SECTION THREE – RESEARCH PAPER

Title page.....	1
Abstract.....	2
Introduction.....	3
Method.....	10
Results.....	16
Discussion.....	22
References.....	28
Appendix A: AMT-C cue words.....	36
Appendix B: Tables.....	38
Appendix C: Notes for contributors.....	41

## SECTION FOUR – DISCUSSION PAPER

Title page.....	1
Implications for future research .....	2
Implications for clinical practice.....	7
Process and personal issues arising from the research.....	10
References .....	14

## SECTION FIVE – WORD COUNT

Autobiographical memory, emotional intelligence, emotion focusing and depression  
in primary school children.

#### Dissertation abstract

The link between overgeneral autobiographical memory (AM) and depression has been well established in adults and in limited research on adolescents. Major theories propose that overgeneral AM is a consequence of childhood trauma, serving to minimise negative affect associated with aversive memories. The body of research in the area tends to support the premise that overgeneral AM function as a short-term protective factor against memories of distressing experiences. However, in the longer term, it may interact with other mechanisms such as rumination, social problem solving and working memory capacity, resulting in vulnerability to depression. Understanding the developmental course of overgeneral AM in people suffering from depression is important in the design and implementation of interventions for both children and adults suffering with depressed mood.

This large-scale research project reviewed and critically evaluated studies on autobiographical memory across the lifespan in the context of the models of AM such as the Affect Regulation Hypothesis and Working Memory Capacity theories of Williams (1996).

The aim of the current study was to explore the relationships between measures of AM, depressed mood, emotional intelligence and a new paradigm known as emotion focusing, in a non-clinical sample of 58 primary school age children.

No statistically significant relationships were found between the constructs and children categorised as high and low in depression did not differ significantly on any of the measures suggesting that overgeneral AM may not be associated with depression in this age group. An analysis of effect sizes indicated that more depressed children may become increasingly reliant on an overgeneral retrieval style with age. This finding is potentially clinically meaningful and worthy of discussion.

Limitations of the research and directions for future investigation, particularly those including longitudinal designs, are discussed. In addition, the theoretical and clinical implications of these findings are discussed.

## **SECTION ONE – ETHICS PROPOSAL**



## Contents

Ethics Proposal.....	1
Appendix A Measures used in proposed study.....	15
Appendix B Information sheets and consent forms.....	22
Appendix C Letter confirming ethical approval.....	25
Appendix D Protocol changes and confirmation of changes.....	28

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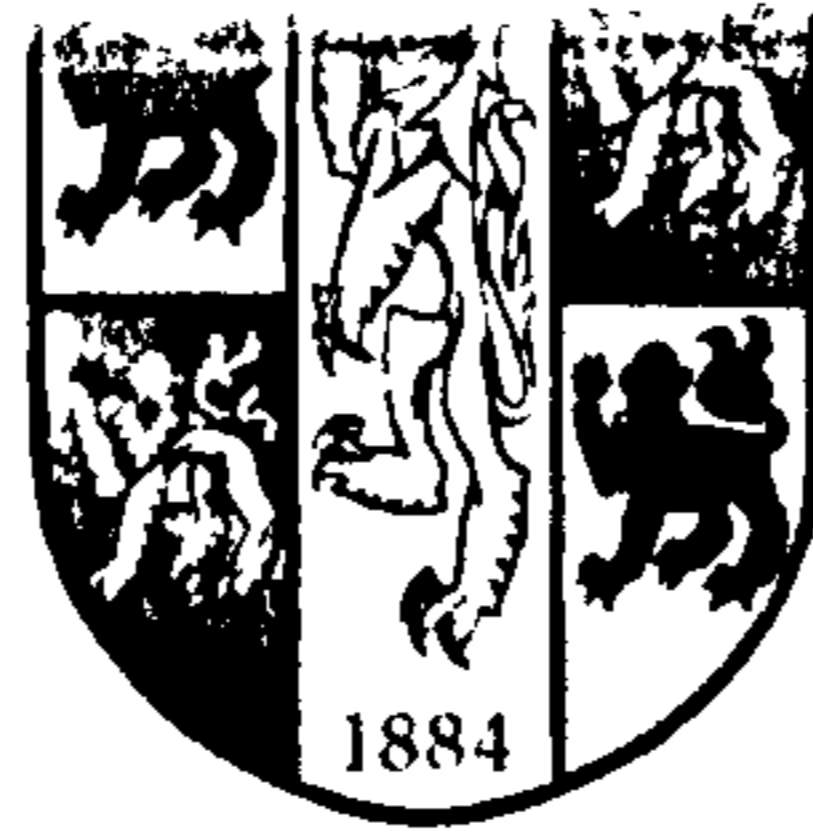
## APPENDIX A: MEASURES FOR PROPOSED STUDY

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**Examples from Drummond's (personal communication) EF image description task.**

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**APPENDIX B: INFORMATION SHEET AND CONSENT FORM**



Dear Parent/Guardian

I am writing to ask your permission for your child to take part in a research study conducted in Liverpool Primary Schools by the University of Wales, Bangor. Your child's school has kindly agreed to help us with the research. Fifty children will be selected from all children whose parents have agreed for them to take part.

### **Participant information sheet**

#### **What is the study about?**

The study is being conducted by Nikki Westwell (Trainee Clinical Psychologist) and Dr Elizabeth Burnside (Clinical Psychologist). We are interested in finding out how the way children remember every day events from their lives relates to their understanding of emotions. We hope that the research will help psychologists understand children better so that we can provide better help and support to children with emotional difficulties/ do more to ensure children's emotional well-being.

#### **What does the study involve?**

If you agree for your child to take part in the study, firstly he/she will take part in a memory procedure which looks at their memory style. This takes about 20 minutes. Secondly, your child will be asked to look at 11 photos of typical family scenes and simply asked to describe what they see. Finally, two questionnaires, taking about 20 minutes, will be completed with your child. The whole thing will take about 45 minutes and children usually enjoy completing the tests. The research will be completed in your child's school.

#### **Confidentiality**

In order to keep accurate records, the memory part of the research will be tape-recorded. These tapes will be destroyed after the study is completed. We will not keep a record of your child's name so all the information relating to them will be anonymous. The information from the tapes and questionnaires will be stored as numbers on a computer.

All the information you and your child gives will be confidential to the researchers unless your child says something which makes us concerned that there might be a serious risk to them or another person. If we felt this was the case we would talk to you first.



## **Participation**

We would be very grateful for your support with our study, but participation is entirely voluntary. If you wish your child to take part, please complete the enclosed consent form and return it to your child's school.

If you do not wish your child to take part you can tell us now or at any time during the research. You do not have to give any reason if you decide not to take part. The research will be quite informal and at any point your child will be able to stop and ask questions, or say if they don't want to carry on.

When the research is completed, we will send you a letter informing you of the results of the entire study.

### **Further information/comments**

We will gladly answer any further questions or concerns you may have. If you have any further questions about the study, Nikki will be pleased to discuss these with you. She can be contacted at the following address:

Flintshire Child and Adolescent Mental Health Service  
9 - 13 Victoria Road  
Connah's Quay  
Flintshire  
Wales  
CH5 1EY

01244 822 244

In the case of any complaints concerning the conduct of the research, please address these to Professor R. Hastings, Acting Head of School, School of Psychology, University of Wales, Bangor, Gwynedd, LL57 2DG.



# Liverpool Children's Memory and Emotional Intelligence Study

Please delete as appropriate

Have you read the information sheet?.....Yes / No

Do you understand that you and your child are free to withdraw from the study:

At any time.....Yes / No

Without having to give a reason.....Yes / No

Do you agree for your child to take part in this study.....Yes / No

Signed..... Date.....

(NAME IN BLOCK LETTERS).....

APPENDIX C: LETTER CONFIRMING ETHICAL APPROVAL

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APPENDIX D: SUMMARY OF PROTOCOL CHANGES AND  
LETTER ACCEPTING CHANGES

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## **SECTION TWO – LITERATURE REVIEW**

## Contents

Title page.....	1
Abstract.....	2
Literature review.....	3
References.....	26
Appendix A: Notes for contributors.....	37



Running Head: CHILDHOOD TRAUMA, AUTOBIOGRAPHICAL MEMORY AND  
DEPRESSION

## **Childhood trauma, autobiographical memory and depression.**

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## Abstract

It has been widely established, in adults and more recently in adolescents, that depressed mood is associated with relative deficits in recalling autobiographical memories in response to emotional cue words on the Autobiographical Memory Test (AMT). Furthermore, early traumatic experiences have been consistently linked with overgeneral memory (OGM). This paper presents the major theories proposed to account for the relationship between childhood trauma, autobiographical memory specificity and depression. In addition, evidence is examined for psychological mechanisms that might account for the link between OGM, aversive childhood experiences and depression. Research in the area increasingly suggests that the way in which OGM impacts on depression is multivariate in nature. Evidence is presented which suggests that avoidance, social problem solving deficits, ruminative style and executive resource depletion are all important factors in the mechanism by which trauma, OGM and depression are linked. Limitations of the research to date and directions for future research in the area are also discussed.

**Key words:** Childhood trauma, autobiographical memory and depression.

## **Childhood trauma, autobiographical memory and depression.**

Over the past decade, knowledge about autobiographical memory functioning has steadily accumulated. The phenomena of overgeneral memory (OGM) was first described by Williams and Broadbent (1986) in a seminal work on inpatients admitted after attempting suicide. The paper introduced the Autobiographical Memory Test (AMT), which required participants to respond with a specific personal memory in response to emotional cue words. A specific memory was defined as an event that happened in a particular place and time, lasting no longer than a day. Patients who had attempted suicide produced around 30% more OGMs, which referred to events that happened repeatedly (categoric memories) or over a period longer than a day (extended memories), than hospital and community controls.

Since then OGM has been found in a variety of adult patient groups (relative to normal controls) including adults with depression (Kuyken & Brewin, 1995; Goddard, Dritschel, & Burton, 1996; Scott, Stanton, Garland, & Ferrier, 2000; Wessel, Meeren, Peeters, Arntz, & Merkelbach, 2001; Kuyken and Howell, in press); Post Traumatic Stress Disorder (PTSD; McNally, Lasko Macklin & Pitman, 1995; McNally, Litz, Prassas, Shin, & Weathers, 1994), Borderline Personality Disorder (BPD; Jones et al., 1999) and Obsessive-Compulsive Disorder (Wilhelm, McNally, Baer & Florin, 1997). A strong link has also been found between OGM and childhood trauma (Kuyken & Brewin, 1995; Henderson, Hargreaves, Gregory & Williams, 2000; de Decker, Hermans, Raes & Eelen, 2003; Hermans et al, 2004).

This review will firstly present the evidence for the links between OGM and adult depression and OGM and childhood trauma. The aim is then to describe leading models that link aversive childhood experiences and autobiographical memory with depression. In addition, recent research designed to explore the psychological mechanisms that might account for this link will be examined. The adult literature will be presented, followed by the currently sparse literature on adolescents and children.

## **Evidence for the link between OGM and depression**

### *Adult research*

Although reduced memory specificity has been found in a variety of affective disorders, the most consistent finding in the autobiographical memory literature is for the link between OGM and depression. In a recent meta-analysis by van Vreeswijk and de Wilde (2004), clinical groups were consistently more overgeneral than healthy controls and this effect was most pronounced for clinically depressed groups. Effect sizes were greater for positive (0.96) than for negative (0.70) cues. However, since the majority of research in this area has utilized cross sectional designs, it is unclear whether OGM had a causal role in the development of depression.

### *Adolescent research*

Further research has investigated the phenomena of OGM in adolescents with a diagnosis of depression. Swales, Williams and Woods (2001) found that inpatients who reported feeling more depressed and hopeless retrieved fewer specific memories on the AMT than a normative comparison group. Similarly, Park, Goodyer and Teasdale (2005) found that

adolescents in remission from depression produced more categoric memories in response to positive cue words than controls. However, the results of a follow-up study of adolescents following admission for first episode major depression suggested that OGM did not predict persistent depression (Park, Goodyer and Teasdale, 2005).

### *Child research*

Drummond (2005) investigated the relationships between age, autobiographical memory and dysphoria in children aged between six and eleven. Results suggested that, while all dysphoric children were overgeneral to negative cues, only older dysphoric children were overgeneral in response to both positive and negative cue words. These results represent the first evidence of over-general memory bias in children.

### **OGM and the course of depression**

OGM is thought to be a stable trait which predates depression. Central to whether OGM plays a theorised causal role in the onset and maintenance of depressed mood is whether memory deficits remain even when depression is in the remission phase. Various researchers have supported this hypothesis (Williams & Dritschel, 1988; Brittlebank, Scott, Williams, Ferrier, 1993; Mackinger, Pachinger, Leibetseder, Fartacek, 2000; Peeters, Wessel, Merckelbach, Boon-Vermeeren, 2003), indicating that OGM may be a marker for future vulnerability to depression. However, as autobiographical memory was not measured before the onset of depression in these studies, it is not possible to conclude that OGM has a causal role. This limitation was addressed in a more recent study by Gibbs and Rude (2004), and they found that OGM predicted levels of depression at 4-6

week follow-up in a non-clinical sample of college students. The following section will examine the research into links between OGM and traumatic childhood experiences.

### **The link between OGM and childhood trauma**

#### *Adult research*

Kuyken and Brewin (1995) investigated autobiographical memory in depressed women who had been sexually abused in childhood. They found more OGM recall in depressed women with a history of abuse than in depressed women who had not experienced abuse. Indeed, overgenerality was correlated with self reports of avoidance and intrusion of distressing memories measured by the Impact of Events Scale (IES; Horowitz, Wilner & Alvarez, 1979). Hence, OGM may depend on the experience of childhood trauma and consequent PTSD symptoms rather than simply the presence of depression. However, non-clinical controls were not used in this study, so it is not possible to establish whether those reporting depression but not reporting childhood sexual abuse (CSA) are different in autobiographical memory style to the general population. Therefore it is possible that survivors of CSA may possess an OGM bias regardless of depression.

Kuyken and Brewin's (1995) findings were supported by Henderson, Hargreaves, Gregory & Williams (2000), who found higher levels of OGM in non-clinically depressed female survivors of CSA relative to controls. However, this study was limited by the fact that no history of depression was taken for these participants, so depression cannot be ruled out as a possible factor.

Further research that purported to examine the links between OGM and childhood trauma, include studies by de Decker, Hermans, Raes & Eelen (2003), and Hermans et al (2004). Both of these studies found that OGM was significantly associated with severity of trauma but not with severity of reported depression. Research by Burnside, Startup, Byatt, Rollinson and Hill (2004) found an association between AMT performance and reported severity of CSA. In contrast to much of the extant literature however, depression was related to *fewer* categoric memories within a sample of women reporting CSA.

A research finding that challenges the link between childhood trauma and OGM was presented by Wessel, Meeren, Peeters, Arntz and Merckelbach (2001). In their sample of ninety-three inpatients, diagnosis of depression rather than childhood trauma predicted performance on a written version of the AMT. However, reports of childhood trauma were relatively infrequent in this study and possibly not sufficient to detect an association with autobiographical memory.

To summarise, although the above studies suggest that overall there is a consistent link between childhood experiences and autobiographical memory, the picture may be more complex than early research suggested. Some of the studies have failed to replicate this association (Wessel, Meeren, Peeters, Arntz & Merckelbach, 2001; Orbach, Lamb, Sternberg, Williams & Dawud-Noursi, 2001) or even found the opposite pattern. For example, Kuyken and Howell (in press) have found that participants who have experienced childhood trauma were less overgeneral than those who had not.

### *Adolescent research*

Meeters, Merkelbach, Huris and Wessel (2000) provided one of the first studies examining the link between autobiographical memory and trauma in adolescents. Their analysis showed that, relative to controls, adolescents with a history of trauma had more difficulty recalling autobiographical facts. A further study by Drummond, Astell and Dritschel (2005) investigated autobiographical memory in a group of thirty adolescents, who were living in a residential educational facility due to a breakdown in family relations. These residents had experienced significant trauma but had no current affective diagnoses. Results indicated that, relative to matched controls, the experimental group were highly overgeneral on the AMT. Interestingly, however, the more severe the documented traumatic life events were, the more specific autobiographical memory was. Similarly, Kuyken and Howell (in press) found that depressed adolescents who had experienced trauma in childhood were less overgeneral on the AMT than those who had not. In fact, more severe symptoms of PTSD were associated with less OGM. Considering the body of evidence that links childhood trauma and OGM in adults this finding is surprising, and may indicate that traumatized children become more overgeneral with age.

### *Child research*

Orbach, Lamb, Sternberg, Williams and Dawud-Noursi (2001) studied a sample of Israeli children who had experienced family violence, and found that their levels of depression was associated with the number of categoric memories retrieved, but no such relationship was found with family violence.



## **Limitations of the literature**

Despite these somewhat mixed findings, most of the available literature appears to support the premise that traumatic childhood experiences play a significant etiological role in the development of OGM. However, further research is needed to tease apart the relative association between traumatic childhood experiences, autobiographical memory and depression. Future studies that utilize two by two designs, in which participants have or have not got depression, with or without a history of abuse, could help to clarify this. In addition, the literature presented here relies entirely on cross-sectional designs which suggest nothing about causal mechanisms in the course of depression. As no pre-trauma measures of autobiographical memory are available it cannot be reliably concluded that OGM represents a determining factor in the relationship between childhood trauma and depression. More prospective, longitudinal studies that track OGM, traumatic experiences and depressed mood across the lifespan are needed to investigate these relationships further. Finally, the comparability of research that relies on the AMT has been called into question due to variations in administration and scoring of the test. For example, in a meta-analysis of fourteen studies that employed the AMT, van Vreeswijk and de Wilde (2004) found substantial variations in a variety of factors including: number and content of cue words used, whether cues were presented orally or on card, time given to respond and handling of omissions (some excluded them from the analysis while others classed them as overgeneral memories). The authors proposed that differences in methodology might account for some of the variation in findings in the literature.

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To conclude this section, recent models of autobiographical memory have suggested that OGM may not only be a consequence of childhood abuse but also an indicator of vulnerability to depression. Thus the exact role (if any) that OGM plays in the development of depression is far from clear cut. It may be that the degree of trauma or the way in which the individual copes with the resulting distress is the key factor in determining whether OGM results. The following discussion will present the predominant models that have investigated the link between these constructs.

### **Models linking childhood experience, autobiographical memory and depression**

One of the dominant models, the Affect Regulation Hypothesis, was theorised by Williams (1996) following the early work of Kuyken and Brewin (1995). The theory states that, following adversity (such as abuse), children may persist in an OGM style typical of younger children as a way of regulating negative affect. As specific memories are likely to be associated with significant and unpleasant emotional arousal, more generic (categoric) retrieval may act to protect the child from distress caused by detailed intrusive memories of past trauma, at least in the short term. Williams (1996) proposed that this process may in the long-term result in vulnerability to depression because, in order to effectively generate solutions to novel problems, the individual must have access to a store of specific memories of past experience. As without this ability the failure to find solutions to these problems may lead to difficulties in socializing and might subsequently lead to depression.

Williams (1996) elaborated his Affect Regulation Hypothesis further by proposing the concept of mnemonic interlock which specifies that, once a memory search has been aborted, further iterations of the same search are performed which produce additional intermediate descriptions. This may result in those more generic descriptions becoming more highly elaborated and therefore more likely to be activated by future searches, leading to the tendency towards OGM (Barnhofer, Jong-Meyer, Kleinpass, & Nikesch, 2002).

Another theory proposed by Williams (1996), the Working Memory Capacity theory, places less emphasis on problem solving deficits. Williams theorized that working memory capacity is filled up by the individual dealing with intrusive memories of traumatic childhood experiences, and proposed that this leads to a reduction in central executive resources, which are necessary to retrieve specific memories. More specifically, during searches of this highly elaborated network of categoric memories, irrelevant information is suggested to be more difficult to inhibit under conditions of reduced memory capacity. The evidence base for these theories is discussed in more detail below.

To recap, current research suggests that OGM may play a crucial role in the onset and course of depression. Although the theories outlined above are not mutually exclusive, they differ in their emphasis on problem solving and executive processing deficits. In contrast to the Affect Regulation Hypothesis, in which OGM has an indirect influence on the development of depression through impaired problem solving, the latter Working

Memory Capacity theory suggests that depression impacts on memory disturbance more directly.

The literature presented so far gives no insight into the mechanism linking these three components. What follows is a review of literature pertaining to the theories presented to explain how trauma may result in OGM and the onset of depression.

### **The Affect Regulation Hypothesis— relationship to intrusions and avoidance**

#### *Adult research*

Williams' (1996) Affect Regulation Hypothesis proposes that memories of intensely aversive childhood experiences are avoided via the use of defense mechanisms. As noted above, research by Kuyken and Brewin (1995) found an association between OGM and avoidance of intrusive memories of childhood abuse. This finding was supported by the work of Brewin, Reynolds and Tata (1999), Wessel, Merckelbach and Dekkers (2001), Stokes, Dritschel and Bekerian (2004) and Raes, Hermans, Williams and Eelen (2005), who reported positive correlations between OGM and scores on the avoidance subscale of the IES. In addition, Heard, Startup, Swales, Williams and Jones (1999) found, in their sample of patients with BPD, that the number of overgeneral memories correlated significantly with scores on the Dissociative Experiences Scale (DES; Carlson & Putnam, 1993).

#### *Adolescent research*

Further evidence of a link between OGM and a different type of avoidance defence mechanism (dissociation) was provided by Johnson, Follmer, Greenhoot, Gilsky and

McClosky (2005). They found that recent exposure to family violence in adolescents was associated with lower rates of negative memories, possibly in an attempt to regulate affect. The possible protective nature of this type of avoidance strategy was demonstrated by Startup, Heard, Swales, Jones, Williams and Jones (2001) who found, in their BPD group, that the frequency of parasuicidal acts was lowest in those patients who showed the greatest overgeneral recall. Therefore, OGM may be protective in the short term as it allows the individual to escape painful memories. It is possible that depression results from a breakdown of this defensive avoidance strategy.

Exceptions to these findings are provided by Sampson, Kinderman, Watts and Sembi (2003), Henderson, Hargreaves, Gregory and Williams (2002), Kuyken and Howell (in press) and Gibbs and Rude (2004), all of who failed to find any association between OGM and self-report measures of intrusions and avoidance. However, although these findings appear to contradict the Affect Regulation Hypothesis, it may be that trauma reactions may still play a part in the development of OGM but that this relationship might be moderated by additional factors such as rumination. However, there is a strong evidence base supporting the theory that coping with painful memories after a traumatic experience could impact on memory specificity.

### **Problem solving deficits**

Previous research suggests that the ability to retrieve specific memories is related to social problem solving (SPS) skills (Evans, Williams, O'Loughlin & Howells, 1992; Goddard, Dritschel & Burton, 1996, 1997 & 2001). D'Zurilla and Goldfreid (1971)

proposed a five stage model of problem solving, the stages were as follows: 1. problem orientation, 2. problem definition. 3. generating of alternative solutions. 4. decision making, and 5. solution implementation and evaluation of success.

### *Adult research*

Evans, Williams, O'Loughlin & Howells (1992) used the Means End Problem Solving Task (MEPS; Platt & Spivack, 1975) to explore interpersonal problem solving in their sample of parasuicidal patients. Participants are presented with short vignettes including a description of the problem and its resolution. They are required to describe the most effective solution to the problem. Evans et al (1992) found autobiographical memory specificity to be highly correlated with problem-solving ability, and concluded that specific memories may function at the problem-definition stage, where referring to previous specific experience could allow greater understanding of the context of the problem, or aid the generation of alternative solutions to the given problem. Williams (1992) extended this idea in his Memory Analog Theory, which proposes that specific, analogical memories are more useful, because they provide more detailed information from which to draw a wider variety of potential solutions.

Further evidence for the association between memory specificity and problem solving in parasuicidal patients is provided by Sidley, Witaker, Calam and Wells (1977) and Kavani, Rahimi-Darabad and Naghavi (2005). In addition, correlations were found between the effectiveness of solutions on the MEPS and autobiographical memory specificity in clinically depressed participants (Goddard, Dritschel & Burton, 1996) and

in college students classified as depressed on the basis of scores on the Beck Depression Inventory (Goddard, Dritschel & Burton, 1997).

Although it appears that memory specificity is important for SPS, due to the correlational nature of these studies, causality cannot be reliably inferred. It is possible that the link may be explained by additional mediating variables. Indeed, Watkins and Baracaia (2002) found evidence that rumination impairs problem solving in depression, and Williams, Barnhofer, Beck and Crane (2005) found that OGM was associated with reduced SPS on the MEPS task in patients in remission for depression, who had a history of suicidal behaviour. They concluded that impairment in SPS could stem from their clinical sample tending towards either avoidant affect-regulating strategies or having a more internally focused, ruminative style. Further to this work, Raes et al (in press) found that OGM accounted for the relationship between rumination and problem solving in a regression analysis involving depressed participants. Importantly, this relationship could not be accounted for by working memory capacity. Again, due to the correlational nature of this study, there are limitations to inferring causality from these data. Further evidence of the link between autobiographical memory specificity and rumination is presented later in this review.

A later study by Goddard, Dritschel and Burton (2001) examined the possibility that SPS in depression could be enhanced by explicitly instructing participants to recall a specific memory prior to generating MEPS solutions. In depressed and control participants priming increased memory specificity, however, this had no positive effect on the quality

of solutions generated. This suggests that specific memory retrieval was not sufficient for successful SPS. Detailed analysis of the data revealed that information within the memory was not used to generate effective solutions. The authors proposed that, possibly due to reduced working memory capacity, the effect of the priming was short lived. Consequently, depressed participants were unable to draw effective problem solving strategies from the memories produced. In fact, in the priming condition, MEPS performance was poorer than in the non-priming condition. Thus, working memory capacity may act as a mediating factor between OGM and SPS.

### Valence effects

Within the literature, mixed results have been found for memory specificity in response to positive and negative cue words on the AMT. If William's Affect Regulation Hypothesis is supported and OGM results from depressed and/or traumatized participants avoiding exposure to distressing memories, one would expect that these groups would be overgeneral to negative cues only. Evidence for this has been found in patients with depression (Mansell & Lam, 2004), patients with a history of overdose (Williams & Dritschel, 1988) and patients in remission for depression (Mackinger, Pachinger, Leibetseder & Fartacek, 2000), suggesting that the tendency to truncate memory searches to negative cue words is not dependent on current mood but is an enduring trait.

OGM to negative cues has also been found in patients who report childhood trauma (Dalgleish et al, 2003; Peeters, 2003; Peeters, Wessel, Merckelbach, Boon-Vermeeren, 2003). Conversely, the opposite effect was found in a sample of depressed women with a history of CSA (Burnside, Startup, Byatt, Rollinson & Hill, 2004). Participants in this



study generated fewer categoric memories to negative cue words relative to never depressed controls with a history of CSA, and no differences were found in response to positive cues. The authors concluded that OGM may have served as a protective factor against distressing memories related to the CSA.

However, there appears to be an overwhelming body of evidence which has shown that either responses to both positive and negative cue words are overgeneral in depression (Brittlebank, Scott, Williams & Ferrier, 1993; Kuyken & Brewin, 1995), or that memories in response to positive cues are relatively *more* impaired than to negative cues. The latter has been found in parasuicidal patients (Williams & Broadbent, 1988; Williams & Dritschel, 1988; Kavani, Rahimi-Darabad & Nagavi, 2005), currently depressed adults (Williams & Scott, 1988; Moffitt, Singer, Nellingan, Carlson & Vyse, 1994; Nandrino, Pezard, Poste, Reveillere & Beaune, 2005), and adolescents in remission from depression (Park, Goodyer & Teasdale, 2005).

These mixed findings challenge the theory that OGM reflects avoidance of distressing memories of trauma, the function of which is to reduce negative affect. A recent meta-analysis van Vreeswijk and de Wilde (2004) found that memory responses were overgeneral to both positive and negative cue words. Furthermore, a significant correlation was found between memory specificity scores for positive and negative cues. Therefore, the authors advocate caution in interpreting these findings as mixed results found across studies into autobiographical memory may, in part, be attributable to methodological variations.

It is difficult to reconcile these findings with avoidance and problem solving elements of the William's Affect Regulation Theory. If the problem is of a more general nature and Memory Analog Theory is correct then it could be expected that OGM would only affect memories to negative cues as these would provide analogous material for generation of alternative solutions. As this is not the case it calls into question the hypothesis that affect regulation strategies that result in deficits in SPS represents the sole mechanism by which trauma affects the development of depression. This does not necessarily imply that poor SPS plays no part in the etiology of psychopathology, but it would appear that the picture is more complex. In depressed individuals, positive and negative cues could produce distressing memories which also need to be avoided. In which case, all memory searches might be truncated. Dalgleish et al (in press) propose that, although the Affect Regulation Hypothesis appears to account for the link between trauma, depression and autobiographical memory, it seems unlikely to be a complete account. A further account was proposed by Kuyken and Brewin (1995), who suggested that avoidance of intrusive memories might interfere with the participant's ability to perform the task, because it is occupying working memory capacity.

### **Working memory deficits hypothesis**

William's reduced Working Memory Capacity hypothesis is one of the leading theories of the mechanism by which childhood trauma, OGM and depression are associated. Considering this, surprisingly few studies have taken working memory capacity into

account. In addition, what literature there is has provided inconclusive or negative results, and is discussed in greater detail below.

### *Adult research*

Baddley, Emslie & Nimmo-Smith (1992) did not find an association between OGM and performance on measures of verbal fluency (e.g. generation of boys' names), and research by Williams and Dritschel (1992) found a negative association between scores on a word fluency task and AM. Furthermore, de Decker, Hermans, Raes and Eelen (2003), in a study of inpatients suffering from a variety of psychological disorders, found no correlation between OGM and working memory capacity.

However, indirect support for the impact of working memory capacity on autobiographical memory in depressed participants was provided by Roberts, Carlos and Kashdan (2005). They found that specificity was shown to decrease over repeated AMT trials, and suggested that increased overgenerality may be due to performance fatigue, accounting for and leading to central executive capacity deficits.

A paper by Dalgleish et al (in press) represents the first attempt to systematically investigate the role of executive processes in autobiographical memory. The paper presents data from eleven studies exploring the extent to which working memory capacity can account for the link found between psychiatric disorders and autobiographical memory specificity. The first five studies confirmed that the AMT is a task demanding working memory resources, and a further six studies attempted to establish whether diminished working memory capacity in depression is an important factor in determining

AMT performance. On the basis of their findings and data from previous literature, Dalgleish et al (in press) speculate on the link between depression, trauma, autobiographical memory and working memory capacity. Reduced working memory capacity did appear to confer increased risk for depression. In turn, intrusive cognitions and affect were considered likely to reduce working memory capacity, creating a vicious circle. They conclude that, while working memory capacity appears to be a significant factor in autobiographical memory effects, individual differences in working memory capacity are unlikely to offer a complete explanation. SPS is one possible intermediate step between autobiographical memory, working memory capacity and depression, because working memory capacity has been shown to be a significant factor in SPS (Kollonen & Christal, 1990) and specificity about future events (Dalgleish et al. in press). In concluding this paper, the authors also theorised that reduced capacity to inhibit affective and ruminative reactions to trauma (Klein & Boals, 2001) may further increase the risk for the development and maintenance of depression.

## **Rumination**

### *Adult studies*

The field of autobiographical memory research has seen an increase in interest in rumination as a contributing factor in depression. Williams (1996) hypothesised that OGM might in itself be stimulated by rumination (Williams, 1996), and Ramponi, Barnard, and Nimmo-Smith (2004) suggested that rumination in dysphoric participants was related to poor performance on the AMT. Goddard, Dritschel and Burton (1996) proposed that categoric retrieval may encourage ruminative processes and that this might

result in an increased focus on past failures rather than participants making an effort to solve problems. The authors proposed that rumination reduces the individuals' motivation to develop new insights and places excessive load on cognitive resources for effective SPS. Support for this idea was provided by Watkins and Baracaia (2002) who found that rumination impaired SPS in depression.

Raes, Hermans, Williams and Eelen (2005) presented evidence supporting this theory in a seven month follow-up study. A regression analysis showed that rumination mediated the association between OGM and SPS in depressed participants. A finding that was replicated in a further study by Raes et al (in press), however, this association was lost when rumination was entered into the equation. This indicated that rumination was the critical factor in predicting low mood.

Further evidence for the link between rumination, OGM and depression comes from studies in which ruminative style is experimentally manipulated. Watkins, Williams and Teasdale (2000) demonstrated the modifiability of OGM in depressed and dysphoric participants using standard distraction and rumination inductions (Lyubomirsky & Nolen-Hoeksema, 1995). They found that distraction decreased OGM and rumination maintained OGM at baseline levels. The above studies suggest that ruminative style may impact on the course of depression and therapy.

### *Adolescent studies*

Similar results were found in depressed adolescents and adolescents in partial remission in a study by Park, Goodyer & Teasdale (2004). These findings are consistent with Williams' (1996) concept of mnemonic interlock, because repeatedly replaying truncated memory searches can lead to generic negative descriptions becoming more highly elaborate. These findings also suggest that strategies which reduce ruminative processing may help to reduce the likelihood of recurrent episodes of depression.

An extension of this work was presented in a study by Watkins and Teasdale (2004) in which analytical thinking was broken down into two components; analytical, and experiential self-focus. The conditions differed only in the way participants were instructed to process physical sensations. Participants were asked either to focus their attention on their experience of the sensations or, in the analytical condition, to think about causes, meanings and consequences of their symptoms. Relative to analytical self-focus, experiential self-focus reduced OGM but had no effect on mood. The authors concluded that these findings provide further evidence for the modifiability of OGM and for the usefulness of, for example, Mindfulness Based Cognitive Therapy (MBCT), which teaches experiential self-awareness, and is discussed in more detail below.

### **Mindfulness and OGM**

Williams, Teasdale, Segal & Soulsby (2000) explored the effectiveness of a MBCT designed to address avoidant modes of processing, in reducing OGM in recovered

depressed patients. Relative to treatment as usual, MBCT resulted in a reduction in OGM. However, as no independent measure of coping style was taken, no conclusions can be made about whether this resulted from a change in avoidant coping. These findings demonstrated that, rather than being a long-term cognitive style that persists regardless of changes in mood, OGM can be modified with training that encourages patients to focus on experiences in the here and now. This has encouraging clinical implications for the successful amelioration of a person's symptoms.

### **Summary and conclusions**

To summarise, advances have been made in our understanding of the link between childhood trauma, OGM and depression, but the literature remains conflicting and confusing. However, although some inconsistencies remain, there does appear to be robust evidence of an association between memory specificity and depression. Relatively robust support is also provided for the association between OGM and childhood trauma.

Research investigating theories of the way in which these three factors are related however, remains particularly confusing. It appears unlikely that one theory alone offers a complete account of autobiographical memory specificity effects. The evidence presented here is consistent with the theory that OGM is a vulnerability factor in the development and maintenance of depression. However, still further literature appears to support the hypothesis that, at least in the short term, OGM may ward off the distressing effects of traumatic childhood memories. It may be that OGM fills both these roles, acting as a short term protective factor which, possibly at the onset of or relapse to a

depressive state, begins to fail, flooding the individual with distressing memories. Thus, OGM might be both the cause and the effect of depression.

In considering the current extant literature, it appears increasingly likely that the way in which OGM impacts on depression is multivariate in nature. Evidence has been presented that suggests that affect regulation strategies such as avoidance, problem solving deficits, ruminative style and executive resource depletion are all important factors in the mechanism by which OGM, trauma and depression are linked. However, the relative contributions of and the way in which these variables interact is far from clear. What is clear is that further research that teases out these interactions is needed, particularly to inform the development of clinical interventions.

### **Future research**

Williams (1996) proposed that OGM style is typical of children younger than four years of age but, as a result of traumatic experiences, this style continues. However, to date no studies have looked at OGM in early childhood. It is possible that OGM represents a regression to generic recall rather than a continuation of memory style typical of the younger child. If this were the case then we might be better able to predict that abuse occurring at a younger age would be more strongly associated with overgeneral adult autobiographical memory. Focusing autobiographical memory research on younger children may also help to elucidate the course of the development of OGM and depression. It is also possible that OGM may not be associated with depression in



younger children who experience depressed feelings, as they have not yet learned to rely so heavily on an overgeneral retrieval style.

Longitudinal prospective research exploring the development of OGM throughout childhood and across the transition into adulthood could clarify this issue. Studies involving repeated measures of mood, intrusions, coping, rumination, working memory capacity and autobiographical memory specificity before, during and after episodes of depression, could help further our understanding. However, one limitation of the research conducted in the area to date is the over-reliance on self report measures. Further studies utilising observer report measures may add weight to the growing autobiographical memory literature base.

Finally, further research is needed to tease apart the association between traumatic childhood experiences, autobiographical memory and depression. Studies that utilize two by two designs in which participants have or have not got depression, with or without experience of trauma in childhood, are needed to address the relative associations of trauma and depression to OGM. In addition, further investigation of how the severity of abuse is related to levels of OGM would be of interest.

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APPENDIX A: NOTES FOR CONTRIBUTORS FOR CLINICAL  
PSYCHOLOGY REVIEW

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INSTRUCTION  
FROM THE  
UNIVERSITY

## **SECTION THREE – RESEARCH PAPER**

## Contents

Title page.....	1
Abstract.....	2
Introduction.....	3
Method.....	10
Results.....	16
Discussion.....	22
References.....	28
Appendix A: AMT-C cue words.....	36
Appendix B: Tables.....	38
Appendix C: Notes for contributors.....	41



Autobiographical memory, emotional intelligence, emotion focusing and depression in children

# **Autobiographical memory, emotional intelligence, emotion focusing and depression in primary school children.**

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**Running Head: Autobiographical memory, emotional intelligence, emotion focusing and depression in children**

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## Abstract

**Objectives.** The present research aimed to explore the relationship between Autobiographical Memory, Emotional Intelligence, Emotion Focusing and depression in a non-clinical sample of primary school age children. It was hypothesised that children with high depression scores would produce more overgeneral memories on the Autobiographical Memory Test (AMT; Williams & Broadbent, 1986), be less emotionally intelligent and produce fewer emotional descriptors on the Emotion Focusing task than children with low depression scores.

**Design and method.** To investigate the relationships between these constructs an opportunity sample of 58 children completed the AMT, Children's Depression Inventory (Kovacs, 1992), Bar-On Emotional Quotient Inventory (Bar-On & Parker, 2000) and Emotion Focusing Task (Drummond, personal communication).

**Results.** No statistically significant relationships were found between measures. In addition, no difference in AMT scores was found between children categorised as high and low in depression. However, analysis of effect sizes revealed that, in year five there was no difference in AM specificity in high and low depressed groups, whereas, in year six, depressed children produced more overgeneral memories than children with low depression scores.

**Conclusions.** Developmental trends in the data support the view that more depressed children may become increasingly reliant on an overgeneral retrieval style with age.

Over the past decade, knowledge about autobiographical memory functioning has steadily accumulated. The phenomena of overgeneral memory (OGM) was first described by Williams and Broadbent (1986) in a seminal work on inpatients admitted after attempting suicide. The paper introduced the Autobiographical Memory Test (AMT) which required participants to respond with a specific personal memory in response to positively and negatively valenced cue words. A specific memory was defined as an event that happened in a particular place and time, lasting no longer than a day. They found that those who had attempted suicide produced more overgeneral memories, for example memories of multiple events, which had happened repeatedly (categorical memories) or events that took place over a period longer than a day (extended memories).

Since then OGM has been found in various adult and adolescent patient groups (relative to normal controls) including patients with depression (Kuyken & Brewin, 1995; Goddard, Dritschel, & Burton, 1996; Scott, Stanton, Garland, & Ferrier, 2000; Wessel, Meeren, Peeters, Arntz, & Merkelbach, 2001; Kuyken & Howell, in press), Post Traumatic Stress Disorder (PTSD; McNally, Lasko Macklin & Pitman, 1995; McNally, Litz, Prassas, Shin, & Weathers, 1994), Acute Stress Disorder (Harvey, Bryant, & Dang, 1998), Borderline Personality Disorder (Jones et al., 1999) and Obsessive-Compulsive Disorder (Wilhelm, McNally, Baer & Florin, 1997). More recently, Drummond (personal communication) has also found an association between OGM and dysphoria in children.

A recent meta-analysis of 14 studies confirmed that psychiatric patients were less specific than non-psychiatric controls in response to both positive and negative cue words (van

Vreeswijk & de Wild, 2004). This effect was strongest for depressed patients. Self reported depressed mood was also associated with overgenerality.

Since the majority of research in this area has utilised cross sectional designs it is unclear what role, if any, OGM has in the development of psychopathology. Brittlebank, Scott, Williams and Ferrier (1993) found that autobiographical memory functioning, rather than depression at baseline, predicted depression severity at 7-month follow-up. The authors considered this support for the idea that OGMs reflect a trait-like phenomenon which may be a predisposing factor for depressive disorders. Further evidence that OGM reflects a stable cognitive trait is provided by Mackinger, Pachinger, Leibester and Fartacek (2000) and Peeters, Wessel, Merckelbach and Boon-Vermeeren (2003) who each found that participants' autobiographical memory remained overgeneral at follow-up despite clinical improvement.

Williams (1996) theorises on the factors that contribute to the development of an OGM style. He proposed that traumatised children may adopt and persist in an overgeneral retrieval style in order to avoid distress caused by memories of intensely aversive experiences. Support for the avoidant function of OGM is reported by, Hermans, Defranc, Raes and Williams (2005) who, in a series of studies, found a negative correlation between autobiographical memory specificity and different types of avoidant coping. Although OGM may serve to protect against negative affect by avoidance, in the longer term, an overgeneral retrieval style may increase the risk of developing depression since the inability to access specific memories may interfere with problem-solving ability

Autobiographical memory, emotional intelligence, emotion focusing and depression in children (Williams, 1996). However, the specific mechanisms by which these are linked remains unclear. This theory is supported by findings that specificity of autobiographical memory is positively correlated with problem-solving performance (Pollock & Williams, 2001) and imageability of future events (Williams, Ellis, Tyers, Healy, Rose, & MacLeod, 1996).

Hermans, Van den Broeck, Belis, Raes, Pieters and Eelen (2004) extend the idea that overgenerality is linked to trauma and emotional problems. While accepting that high memory specificity is related to 'emotional health' they theorise that being less specific may, in some cases, be advantageous in the short-term and can be functional, protective or adaptive, allowing the individual to regulate affect by avoiding negative emotions. In the longer term, however, reduced memory specificity may be maladaptive since prolonged avoidance may result in this strategy becoming ingrained and losing its flexibility. This loss of flexibility may be an important factor in the maintenance of depression. It would therefore be helpful to consider autobiographical memory within a developmental framework to clarify the origins and development of autobiographical memory style.

### Emotional Intelligence

Salovey and Mayer (1990) first defined emotional intelligence (EI) as the capacity to process emotional information accurately and efficiently, including that information relevant to the recognition, construction and regulation of emotion in oneself and others.

Since then EI has received much attention from laypeople and psychologists. The concept

Autobiographical memory, emotional intelligence, emotion focusing and depression in children of EI captures several inter- and intra-personal characteristics and represents a person's general emotional and social competence and ability to deal effectively with life stress (Goleman, 1995). Although this is generally agreed, debate exists in the research community as to the components that constitute EI. Petrides, Furnham and Frederickson (2004), for example, highlight 15 aspects of EI including emotion management, assertiveness, self esteem, social competence, emotion regulation, adaptability and emotion expression.

Emotional Intelligence is thought to contribute to maintenance of positive mental health. In two studies Schutte, Malouff, Simunek, McKenley and Hollander (2002) found an association between EI and positive mood and higher self-esteem. The authors also found that individuals with higher EI were more able to maintain positive mood after a negative state induction procedure. Further evidence for deficits in understanding and regulation of emotion and poor coping has been found in dysphoric (Garber, Braafladt & Weiss, 1995) and maladjusted (Meerum-Terwogt, 1990) children.

Bar-On's (2000) influential model offers a more simplified representation of the skills that contribute to EI. Within this framework, components of EI are conceptualised as fitting within four categories:

- **Intrapersonal Abilities** including emotional self awareness, assertiveness, independence and self-actualisation
- **Interpersonal Scales** including identifying emotions in others and empathy

Autobiographical memory, emotional intelligence, emotion focusing and depression in children

- **Adaptability Scales** involving the ability to adjust feelings and reactions according to context and problem solving ability
- **Stress Management Scales** which include tolerance of stress and impulse control

Bar-On conducted pioneering work on EI for many years, coining the term “EQ” (“emotional quotient”) in 1985 to describe his approach to assessing emotional and social competence. He created the Emotional Quotient Inventory (the EQ-i, 1997), which was later adapted for use with children and adolescents (Bar-On & Parker, 2000). The inventory measures features of EI under the four categories listed above. The literature on EI in adulthood is growing; however, our understanding of the emergence of these skills and their characteristics in children is scant.

Mayer and Salovey (1995) proposed that depression may be related to automatised defense patterns learned in childhood. Alternatively, people with high EI are able to regulate emotion without reliance on defensive coping strategies such as avoidance. Given that overgeneral autobiographical memory has been linked with affect regulation through avoidance of painful emotions and also the association found between autobiographical memory and problem-solving ability, one might expect to find relationships between autobiographical memory performance, EI and psychological wellbeing in both childhood and adulthood.

Despite the advancing literature base, how and when overgeneral memory develops and whether it is a consequence of previous psychopathology remains unclear. To address

Autobiographical memory, emotional intelligence, emotion focusing and depression in children  
this, Park, Goodyer and Teasdale (in prep) compared memory specificity in adolescents with first episode Major Depressive Disorder (MDD), non-depressed psychiatric controls and matched controls. They found that psychiatric patients (including remitted MDD patients) recalled more OGMs when compared to normal controls. Number of categoric memories was related to self-reported severity of depression. These findings demonstrate evidence that OGM is a feature of first episode MDD which may persist following remission, supporting the view that autobiographical memory style is a stable trait-like phenomenon, and is present at least as early as adolescence. However, owing to the cross-sectional nature of the data, the study was unable to address questions regarding the direction of effects found. Thus, although it is believed that OGM is a characteristic which begins in childhood, this important proposition has rarely been explored.

One study, conducted by Drummond (personal communication), investigated the relationships between age, autobiographical memory, Emotion-Focusing (EF) and dysphoria in children. Participants were split into two age categories: seven to eight year olds ( $n = 35$ ) and ten to eleven year olds ( $n = 35$ ). Drummond conceptualises EF as the degree to which individuals focus on emotional features of events. Her data showed that all dysphoric children were overgeneral to negative cues and that older dysphoric children were also impaired in response to positive cues. Furthermore, children who tended to be more focused on emotional characteristics of their environment demonstrated more specific memory retrieval. While these results represent the first evidence of OGM bias in children, they also highlight the possible importance of EF in the development of psychopathology.



Drummond conceptualises EF as a trait of the individual that predisposes them to encode emotion in their environment. Participants are categorised as high, medium or low EF.

Drummond theorises that high EF may lead to greater specific recall of emotional events.

This assertion is supported by the finding that high EF was associated with greater

autobiographical memory specificity (Drummond, personal communication). The EF

measure may therefore map on to the avoidant versus sensitised type of emotion

processing. Consistent with Williams' (1996) Affect Regulation Hypothesis, Drummond

proposes that deficits in EF and autobiographical memory are related and that this link

may be associated with avoidant coping styles. These deficits may be linked because they

both confer disadvantages in social problem solving, adaptability, emotion regulation and

emotion perception; all key features of EI (Petrides, Furnham & Frederickson, 2004).

Further work on autobiographical memory in children examining the relative

contributions of emotional intelligence and emotion focusing in children with and

without depression is required. This work will advance our knowledge of the nature of

OGM and factors that contribute to its development and might help clinicians to tailor

interventions for children.

If children are avoidant of negative affect and this is initially adaptive then it is possible

that they would be less likely to suffer from emotional difficulties in the short term.

Although this strategy could function initially to ward off problems, depression could

develop subsequently.

The study presented here aimed firstly, to investigate the extent to which autobiographical memory, EI and EF are interrelated in a sample of primary school children. A second analysis aimed to explore which of these factors best predicted depression. In addition, it was hypothesised that children scoring high on a self-report measure of depression would produce more OGMs on the AMT, be less emotionally intelligent and produce fewer emotional descriptors on the EF task than children with low depression scores. This represents an attempt to partially replicate the findings of Drummond (personal communication) who showed that both dysphoric mood and EF were linked to OGM in children.

## Method

### Participants

Parents of 115 children aged nine to eleven were asked for their consent to allow their child to participate. All children attended one of two local primary schools. Fifty-nine parents consented. Of these, fifty-eight children completed all measures. One was unwell during testing and was unable to participate. Thirty-three were female and twenty-five were male with a mean age of 10.19 years ( $SD = .66$ ).

### Measures

*Autobiographical Memory Test.* An adapted version of the AMT (AMT-C; Drummond, personal communication) was administered to test memory specificity. The procedure, instructions, cue words and coding scheme used for the AMT followed that already

Autobiographical memory, emotional intelligence, emotion focusing and depression in children utilised by Drummond (personal communication), which is based closely on the original adult measure devised by Williams and Broadbent (1986).

Cue words (see Appendix A) were presented on flashcards and the child was asked to recall a memory that was related to that word. Standardised instructions were used to explain the task requirements, which read: "I want to find out about your memories for things that have happened to you". To explain what was meant by a specific memory the researcher said "a memory that happened on one day, at one time".

Prior to formal testing, participants completed three practice trials involving neutral cue words. Practice trials were repeated and instruction given until the child successfully completed at least one practice item correctly. Ten cue words, five positive in tone (happy, surprised, safe, interested and good) and five negative in tone (sad, lonely, angry, scared and hurt), were then presented. Thirty seconds was given to retrieve a memory. Where overgeneral responses were generated, the child was prompted to think of a specific event lasting less than one day. However, scores represented the type of memory given before prompting. Overgeneral categoric memories were those that consisted of a class of multiple events (e.g. "when I go to brownies on a Thursdays") and overgeneral extended responses were memories of events that lasted more than a day (e.g. "my holiday in France"). Failure to retrieve a memory within 30 seconds was counted as an omission. Participants were audiotaped throughout.

The stability of the AMT has been investigated using various experimental designs. Brittlebank, Scott, Williams and Ferrier (1993) found that scores on the AMT were stable over a 7 month follow-up period indicating that overgenerality is a stable trait. This

finding was supported by Mackinger, Pachinger, Leibester and Fartacek (2000) who demonstrated that women in remission for MDD remained more overgeneral than controls. Similarly, Peeters, Wessel, Merckelbach and Boon-Vermeeren (2003) found that OGM was stable over three and seven month follow-up assessments despite clinical improvement. Furthermore, autobiographical memory specificity was shown to be unaffected by a mood induction procedure, indicating that OGM is a stable trait (McBride & Cappeliez, 2004). Park, Goodyer and Teasdale (2004) found evidence for the stability of the AMT in adolescents. Patients in remission from MDD retrieved more categoric memories than controls.

Inter-rater reliability was calculated with a second, independent rater using a sub-sample (10) of the AMT-C data. Inter-rater agreement on autobiographical memory data was established ( $k = .65$  (Landis & Koch, 1977)).

Evidence for the discriminant validity of the AMT in adults is well established. A recent meta-analysis showed that clinical groups were consistently more overgeneral than healthy controls (van Vreeswijk & de Wilde, 2004). This effect was most pronounced for clinically depressed groups. Drummond (personal communication) provides discriminant validity data on the AMT-C in children (aged 6-11). All dysphoric children demonstrated an overgeneral retrieval bias to negative cues relative to matched controls. Older children (aged 10-11) were also overgeneral in response to positive cue words.

*The Children's Depression Inventory.* The CDI (Kovacs, 1992) is a 27-item, self-rated, symptom-oriented scale suitable for youths aged seven to seventeen. For each item, the

Autobiographical memory, emotional intelligence, emotion focusing and depression in children individual is asked to select the statement that best describes their feelings over the past two weeks. CDI T-scores are based on a normative sample of 1266 youths and are calculated based on age (7 to 12 or 13 to 17) and gender. The CDI is sensitive to changes in depressive symptoms over time and is a useful index of the severity of the depressive syndrome (Kovacs, 2004).

Internal consistency coefficients of the scale range from .71 to .89 and test-retest coefficients range from .74 to .83 (time interval two-three weeks). The CDI has good discriminant and concurrent validity (Hodges, 1990; Smith, Mitchell, McCauley & Calderon, 1990; Weissman, Orvaschel & Padian, 1980).

*Bar-On Emotional Quotient Inventory (EQ-i: YV: Bar-On & Parker, 2000).* The inventory consists of 60 statements that cover a wide range of emotional and social functioning. On a 4-point scale, clients rate how true each statement is of them. The scale takes approximately 30 minutes to complete. It gives an overall EQ score as well as scores for four composite scales and 13 subscales which represent the factors of emotional intelligence outlined in Bar-On's (2000) model.

The measure is internally consistent (values for subscales ranged from .65 to .87; Bar-On, 2000) and has temporal stability (values for subscales ranged from .77 to .88; Bar-On, 2000) over a three week period. Bar-On (2000) demonstrated that the measure has sufficient construct validity to warrant publication and recommendation for clinical and research use. Results from factorial and construct validity analyses indicate that the Bar-On EQ-i: YV scales identify core features of EI in children and adolescents. Subscales of

Autobiographical memory, emotional intelligence, emotion focusing and depression in children

the children's EQ-i: YV correlated with the adult version (scores ranged from .56 to .88; Bar-On, 2000) which has been shown to have good discriminant validity (Bar-On, 1997). Bar-On (2000) also found that subscales of the Bar-On EQ-i: YV demonstrated significant convergent and divergent validity with appropriate subscales on the Five-Factor Model of Personality (Costa & McCrae, 1992).

*Emotion Focusing Test* (EF; Drummond, personal communication ). The EF test is a picture-cueing paradigm in which a series of 11 photographic images of socio-emotional behavioural situations (e.g. a father chatting and smiling with his son, a mother and father smiling at their newborn baby) were presented to participants on 200 mm x 150 laminate cards. Images were drawn from a developmental psychology stimulus pool. All except one of the cards involved a child protagonist. Protagonists were of mixed age and race. Participants were asked to 'Tell me what you see' in response to being shown each card. Responses were audiotaped and later coded for emotional description. Participants were given a score of one if an emotional adjective or adverb was used in the description of the card, for example 'sad, excited, loving'. A score of zero was given for each card where no emotional description was given, for example 'a girl on the phone'. Only an emotional descriptive resulted in an emotional classification. A strict coding criteria was used such that inference of emotion was not considered sufficient to classify as an emotional description (for instance, "dad is making up with his son after missing his school play"). Whereas Drummond categorised participants in terms of high, medium and low EF, because the analyses utilised in the research presented here are correlational, data from the EF measure are used as a continuous variable.

Inter-rater reliability was calculated with a second, independent rater using a sub-sample (10) of the EF data. Inter-rater agreement on EF data was established ( $k = .87$ ).

### Procedure

Eight primary schools in the Merseyside area were approached by telephone. Four agreed to an initial meeting to discuss the research. Of these, two headteachers agreed to help after consultation with their board of governors. Parents of all children in years five and six were informed about the study by letter and asked for their consent to allow their child to participate. Ethical permission was sought and granted by the University of Wales-Bangor, School of Psychology ethics committee.

Children whose parents gave their consent were taken out of class in groups of up to eight to complete questionnaires. The requirements of the task and limits of confidentiality were discussed with the children on initial meeting and written consent obtained.

Children were positioned such that they could not copy from each other and asked not to discuss their answers. Once the questionnaires were completed the children returned to class and were then removed one by one to complete the AMT-C, EQ-i: YV and the EF test. As much as possible, testing was conducted in a quiet testing environment within the school. Once all measures were completed children were thanked for their participation and debriefed.

## Results

### Data preparation

Total scores on the CDI and EQ-i: YV were generated according to manual guidelines. This involved computing additional variables in which all scores on the relevant measure were summed. EF total scores were computed by summing the number of items on which an emotional word was generated. Total number of specific and categoric memories were calculated by summing the number of specific and categoric memories generated by each participant over ten cue words.

Within the depression variable, high and low depression groups were created according to a median split. In addition, a clinically depressed group was created by grouping those participants with a score of 20 and above. The clinical prevalence of depression in the normal population is estimated to be approximately 10% (Kovacs, 1992). On the basis of this finding, Kovacs (1992) recommended the use of a clinical cut of 20 (total CDI score) for the purpose of general screening for depression. In the sample presented here, 19% (11 out of 58) of children fell within the clinical range for depression according to these guidelines.

No outliers were removed from the data set because predominantly correlational analyses were planned. The data was thoroughly checked and was found to have less than 5% missing data.



Autobiographical memory, emotional intelligence, emotion focusing and depression in children

Kolmogorov-Smirnov tests of the total number of specific and categoric memories generated indicated that the data were not normally distributed ( $z = 1.63, p < .01$  and  $z = 2.36, p < .001$  respectively). However, Kolmogorov-Smirnov tests for EI, EF and CDI total scores revealed that these variables were normally distributed ( $Zs < .125, ps > .05$ ).

### Demographics

Of the 58 children who completed all measures, 33 were female and 25 were male with a mean age of 10.19 (SD = .66). Age and gender related differences on the EF, EI and CDI were explored using t-tests (See Table 1). For analyses of age related differences, participants were split by school year. There were no significant differences on any of the measures for age or gender.

*Insert Table 1 about here.*

### Analysis strategy

The analysis examined the relationship between EI, EF and autobiographical memory. Data were entered into three zero order inter-correlations to test the extent to which EI, EF and autobiographical memory were correlated.

On the basis of the assumed finding of an association between EI, EF and autobiographical memory, and any differences in these variables between high and low depressed a further analysis intended to explore which of EI, EF and autobiographical memory best predicted depression. It was proposed that a linear regression analysis, with

EI, EF and autobiographical memory as the independent variables would be used to address this.

For group based comparisons with more than 15 cases per cell, ANOVAs were used even on non-parametric data because ANOVA is robust to violation of the non-parametric assumption with greater than 15 cases per cell (Green, Salkind & Akey, 2000). For any analyses that had fewer than 15 cases per cell the appropriate non-parametric test was used.

To test for differences on the EI, EF and AMT-C between high and low depressed children (median CDI split) one way ANOVAs were used. In addition, as the number of children in the clinical range for depression was unusually high, a further analysis exploring the difference in autobiographical memory specificity and categoric memories in those within and without the clinical range for depression, was possible. Mann-Whitney tests were used to compare mean ranks on the measures in children above and below the clinical cut-off for depression (as described above).

### Analysis

Pearson's correlation coefficients were used to explore the relationships between EF, EI and EF, EF and CDI, and EI and CDI total scores. All correlations were statistically non-significant. In addition, Kendall's Tau, non-parametric correlations were employed to test the relationships between the number of specific and number of categoric memories

Autobiographical memory, emotional intelligence, emotion focusing and depression in children produced and total CDI, EF and EI scores. All analyses were non-significant (see Table 2 for all correlation coefficients).

*Insert Table 2 about here.*

A further analyses utilising ANOVAs for participants categorised as high and low depressed on the CDI (on the basis of a median (score of 10) CDI data split) were used to look for differences on each of the EI, EF, generic and specific memory variables. Analyses revealed that there were no significant differences between the groups (see Table 3).

*Insert Table 3 about here.*

T-tests were used to test for differences in total scores EI and EF measures in the depressed and non-depressed groups. The results were non-significant (see Table 4).

*Insert Table 4 about here*

In addition, Mann-Whitney tests were used to test differences in the number of specific and categoric memories generated on the AMT-C in children in the clinical range for depression in the CDI verses children not in the clinical range. As before the differences were non-significant (see Table 5).

*Insert Table 5 about here*

Because of the lack of any association between EI, EF and autobiographical memory and the lack of any group differences on these variables, the linear regression analysis to determine which of the three variable best predicted depression was not appropriate. This lack of significant findings is contrary to the adult literature, which consistently finds relationships between autobiographical memory and depression. Therefore a further analysis was designed to test whether there is a developmental influence in the relationship between depression and autobiographical memory specificity. It was hypothesised that the younger participants (year five) in this study may not yet be presenting the usual adult pattern of overgenerality, whereas, by the older age group (year six), differences in autobiographical memory specificity between depressed and non-depressed children may begin to show. Effect sizes of differences in the number of specific and categoric memories generated by depressed and non-depressed children were compared at ages ten and eleven. This analysis was conducted for CDI scores split by median value and also by clinical cut off (as described above). Effect sizes were used because, by breaking the groups down in this way, the number of participants in each group was not great enough to allow other statistical analyses.

Present effect sizes for differences between high and low (based on the median data split and also children who fell above and below the clinical range for depression) CDI groups on the AMT-C in each of two school year groups (years five and six) were compared on number of specific memories. Where clinical cut-off on the CDI was used in the analyses,

Autobiographical memory, emotional intelligence, emotion focusing and depression in children

year five had six children in the clinical range and twenty below the clinical cut-off. Year six contained five children in the clinical range for depression and twenty seven who were not in the clinical range. For analyses based on splitting the CDI data at its median value, in year five, fifteen children scored high for depression and twelve had low depression scores. In year six, there were fifteen in the high depression category and sixteen in the low depression group.

The effect size for the difference in number of specific memories in the high and low depression group in year five ( $d = .05$ ) was almost nine times lower than the effect size in year six ( $d = .44$ ). Similarly, when comparing children in the clinical range for depression with those in the non-clinical range the effect size was smaller in year five ( $d = .03$ ) than in year six ( $d = .20$ ). The means were in the expected direction with the more depressed children generating fewer specific memories in year six in both analyses, supporting the theory that depressed children are less able to produce specific memories on the AMT-C as they get older.

Similarly, the effect size for the difference in number of categoric memories generated by high and low depressed (median data split) children in year five ( $d = .14$ ), was lower than the effect size in year six ( $d = .43$ ). In addition, when children in the clinical range for depression were compared with children below the clinical cut-off, a developmental trend was found. In year five the effect size for the number of categoric memories produced was smaller ( $d = .15$ ) than in year six ( $d = .40$ ). As in the data for specific memories, this

Autobiographical memory, emotional intelligence, emotion focusing and depression in children may support the view that more depressed children become increasingly reliant on an overgeneral retrieval style over time.

## Discussion

In this sample of primary school children no association was found between AMT-C performance, EI, EF and depression. Similarly, no differences were found between children categorised into high and low depression groups on any of the measures. These results are contrary to research in adult (van Vreeswijk & de Wild, 2004) and child populations (Drummond, personal communication) which have found lower autobiographical memory specificity among depressed groups. The findings also contradict the work of Park, Goodyer and Teasdale (in prep) who found that memory specificity was associated with severity of depression in their adolescent sample. It is possible that, although the link between OGM and depression is reliably found in adults, this effect is not present in children. As Williams (1996) suggests, autobiographical memory deficits might only result in vulnerability to depression in the long term. Therefore, we would not expect to find a link between the two factors in younger children.

The lack of an association between EI and autobiographical memory or depression was unexpected considering the growing literature on the link between EI and emotional disorders (Garber, Braafladt & Weiss, 1995; Meerum-Terwogt, 1990). It is possible that general EI is not related to OGM, rather a more specific element of EI such as coping behaviour (i.e. avoidance), rumination or social problem solving. As these factors were

Autobiographical memory, emotional intelligence, emotion focusing and depression in children not measured in their own right no conclusions can be made. Further research might usefully pursue these avenues.

The failure to find an association between EF and autobiographical memory or depression was also surprising given that Drummond (personal communication) demonstrated an interaction between EF scores, dysphoric mood and memory specificity in a sample of primary school children. However, the research presented here was a *partial* replication of Drummond's work and there are a number of ways in which the design differed from Drummond's. Firstly, data from the EF test were used as a continuous rather than categorical variable. The CDI was used instead of Drummond's test of dysphoria which may have provided a more sensitive measure of mood in children from a non-clinical population. In addition, children were aged nine to eleven, as opposed to the two age groups (seven to eight and ten to eleven year olds) used in Drummond's study. These factors may account for our failure to replicate Drummond's findings.

Regardless, as this research is only one of two investigations into autobiographical memory and EF effects in children, EF may still prove to be an important factor associated with autobiographical memory and depressed mood pre-adolescence. Future research incorporating this new measure may lend further support for the role of EF in the development and maintenance of OGM and depression.

Autobiographical memory, emotional intelligence, emotion focusing and depression in children

As a result of these null findings the planned regression analysis was not possible. The lack of significant findings might be explained by a number of methodological limitations. Firstly, although every effort was made to keep distraction to a minimum, the school environment tended to be quite noisy and the room available for testing was not free from interruptions. As performance on the AMT has been shown to be significantly affected by increased working memory load (Dalgleish et al, in press) this may have impacted on children's performance. It is worth noting that, due to a number of ethical considerations, it was not possible to test the children in another environment. Secondly, the depression measure used (the CDI) is a screening tool used in clinical populations which may be less sensitive to variations in general population samples. The effects found may have been stronger had a clinical population been used. Further research on autobiographical memory specificity in clinically depressed child samples may provide a clearer picture. Finally, order effects may have impacted negatively on the findings, particularly regarding EF scores. As the EF test was administered at the end of the testing session, preceding measures may have given children some indication that the task required them to generate emotional descriptors. As children were not blind to the task requirements, typical variation in scores across the sample may have been reduced. The EF test might have more usefully been administered before the AMT-C and EI measures.

A further analysis took a developmental perspective on the data. Effect sizes revealed that, in year five, there was little difference between high and low depressed groups in the number of specific memories generated. In contrast, in year six, children with high scores on the CDI generated fewer specific memories compared to those with low self-reported



Autobiographical memory, emotional intelligence, emotion focusing and depression in children  
depression. This effect was similar for number of categoric memories generated. These data suggest that the typical effect of reduced autobiographical memory specificity found in depressed adults and adolescents, while not present in children in year five, may develop as the child approaches adolescence. This finding is consistent with the work of Drummond (personal communication) who found an interaction between autobiographical memory, depression and age in her normal population sample.

One might tentatively conclude on the basis of this finding that depressed children may become increasingly reliant on an overgeneral retrieval style over time. This cognitive strategy may be employed to ward off memories of distressing events, as in Williams' (1996) affect regulation theory. However, caution is advocated in interpreting these results as the effect sizes, while increasing over time, remained small. In addition, particularly in analyses where the data was split by school year and CDI clinical cut-off, sample sizes in the depressed groups were low and, therefore, may not have been sufficient to perform a meaningful analysis.

Further research with greater numbers and a larger age range could explore this further. Research has found that, by age seven, autobiographical memory recall is equivalent to that seen in adult populations (Gathercole, 1998). Therefore, investigations with children aged from seven to adolescence may elucidate the development of the association between autobiographical memory and depression. Research designs incorporating younger children would also present an opportunity to examine whether OGM is protective in the short term, as predicted from Williams' (1996) Affect Regulation

**Theory. In addition, future research involving longitudinal designs could explore causal mechanisms in the development of OGM and its relation to depression.**

**This research and future investigations recommended on the basis of these findings have clear implications for clinical practice. Work with parents of children currently experiencing or at risk for developing affective disorders may usefully target narrative parenting style as this might impact on children's autobiographical memory functioning (Fivush, 1998; Haden, Ornstein, Ekerman, & Didow, 2001). Enhancing parental narrative style might provide the child with a more appropriate model of specific autobiographical memory, thereby encouraging recall of detailed memories which could potentially be a protective factor in the long-term future. In addition, within the adult literature, support is beginning to emerge for the impact of mindfulness-based cognitive therapy on reducing categoric autobiographical memory (Williams, Teasdale, Segal & Soulsby, 2000). A version of this eight week program adapted for use with children might prove to be an effective way of modifying OGM. Exciting progress has been made in this area, with the first mindfulness based interventions for use with children currently being developed, with promising results (Goodman, 2005).**

**Alternatively, interventions might be appropriately aimed at elements of emotional understanding and coping such as emotion focusing or avoidance of emotions. Finally, the findings of this type of research may have some implications for the timing of interventions. Early intervention or indeed preventative work, as suggested by findings in**

Autobiographical memory, emotional intelligence, emotion focusing and depression in children  
**the emotional intelligence literature, could reduce the impact of OGM on the subsequent development of emotional disorders.**

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Tables identified in the text

Table 1. T-tests for age and gender related differences on the EF, EI and CDI.

Variable	Year 5 (n =) Mean (SD)	Year 6 (n =) Mean (SD)	t	df	p
CDI	12.63 (9.95)	11.03 (8.38)	.66	56	.51
EI	79.00 (7.69)	78.94 (9.00)	.03	56	.98
EF	5.67 (2.59)	5.71 (2.95)	-.06	56	.95
Gender	Male	Female	t	df	p
CDI	12.08 (9.14)	11.55 (9.20)	.22	56	.83
EI	78.12 (9.51)	79.61 (7.43)	-.67	56	.51
EF	5.88 (2.88)	5.55 (2.71)	.45	56	.65

Table 2. Correlation Coefficients for EI and EF, EF and CDI, and EI and CDI total scores and also total number of specific and total number of categoric memories and CDI, EI and EF.

	CDI total score	EF total score	EI total score
CDI total score		-.123	-.117
EF total score			-.01
EI total score			
Number of specific memories	-.05	.12	.08
Number of categoric memories	.08	-.10	.04

Table 3. ANOVAs comparing high and low CDI total score (median split) on EF, EI, and specific and categoric memory variables.

Variable	Mean and standard deviation for high CDI score n = 30	Mean and standard deviation for low CDI score n = 28	F	df	p
EF	5.23 (2.50)	6.18 (3.00)	1.72	1	.20
EI	77.90 (1.52)	80.11 (1.58)	1.01	1	.32
Categoric memories	1.53 (1.78)	1.29 (1.93)	.34	1	.56
Specific memories	7.20 (.49)	7.80 (.51)	6.96	1	.41

Table 4. Results of t-tests comparing EI, EF in children within and without the clinical range for depression (CDI total score)

Variable	Mean for clinically depressed group n = 11	Mean for non-clinically depressed group n = 47	t	df	p
EI	78.27	79.13	-.30	56	.76
EF	5.36	5.77	-.43	56	.67

**Table 5. Results of Mann-Whitney tests comparing total number of specific and total number of categoric memories in children within and without the clinical range for depression (CDI total score)**

	Mean rank for clinically depressed group n = 11	Mean rank for non-depressed group n = 47	z	p
<b>Categoric memories</b>	32.23	28.86	-.63	.53
<b>Specific memories</b>	28.18	29.91	-.29	.77

APPENDIX C: NOTES FOR CONTRIBUTORS TO THE BRITISH  
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## **SECTION 4 – DISCUSSION PAPER**

## Contents

Title page.....	1
Implications for future research .....	2
Implications for clinical practice.....	7
Process and personal issues arising from the research.....	10
References .....	14

**Contributions to theory, clinical practice and learning**

**Nikki Westwell**

**University of Wales - Bangor**

### Implications for future research and theory development

The research presented here aimed to explore the relationships between autobiographical memory (AM), emotional intelligence (EI) and emotion focusing (EF), and to ascertain which best predicted depression in children. Statistical analyses revealed that there was no association between the constructs measured and no statistically significant differences between high and low depressed groups on any of the measures. In additional analysis of effect sizes of the difference in specific and categoric memories generated by children categorised into high and low depressed groups was compared for children in years five and six. In brief, a trend in the data indicated that, while in year five autobiographical memory (OGM) was not related to depressed mood, in year six, children scoring high for depression produced more overgeneral memories than the non-depressed group. This finding will be discussed further below.

Various methodological limitations and process issues relevant to the literature in general may account for the null findings. Future research should endeavour to address these weaknesses. However, it may be that the link between overgeneral OGM and depression develops later in childhood.

#### *The sample*

One weakness of the study was in the number of children tested. Time restrictions are naturally imposed when conducting research for a clinical doctoral thesis, however, further exacerbated by ethical considerations. The initial research was to be conducted with looked after children who had experienced abuse. Reviewers of the proposal

highlighted ethical issues surrounding research with such a vulnerable group.

Attempts were made to address these issues, however, initial drafts of the research were eventually aborted. Repeatedly redrafting the proposal meant that less time was available for data collection, therefore, a restricted number of parents were approached for consent limiting the eventual sample size.

Given that the sample used was from a non-clinical population, a larger sample would have ensured greater statistical power. The small number recruited for the study (n = 58) meant that only eleven participants fell within the clinical range for depression, therefore statistical testing was limited to reduce type I errors. The fact that so many children participating in the research fell within the clinical range for depression was not predicted and could represent a further methodological confound. The clinical prevalence of depression in the normal population is estimated to be approximately 10% (Kovacs, 1992). In our sample 19% of children reported clinically significant depression. It would appear then that our opportunity sample of primary school children was not representative of the normal population. This may be explained on the basis of socio-economic status, which is known to predict emotional difficulties in children (Loeber, 1990). Both schools involved with the research were based in inner city areas known to be high in deprivation. Further research should address this issue, ensuring a stratified random sample of children from all socio-economic groups.

#### *Test administration issues*

As mentioned earlier in this report order effects may have had some bearing on the findings of the research. In the case of the EF task, measures administered earlier may have given children some indication as to the rationale behind the paradigm, thus

impacting on task performance. With the AMT it was felt that, particularly the younger children might have struggled to understand the meaning of some cue words. Given the 30 second time limit, this may have negatively effected responding. This problem was ameliorated by the investigator beginning timing after ensuring the child understood to meaning of the word, however, it is possible that anxiety generated as a result could have impeded performance.

In addition, the testing environment within the school tended to be noisy and disrupted. Although every attempt was made to reduce the impact of this, it may have distracted participants from the task. Considering recent findings in the autobiographical memory literature for a strong link between working memory capacity and AMT performance (Dalgleish et al, in press), this could have contributed to the lack of significant findings. However, this problem highlights issues around the ecological validity of conducting research in a “sanitised” testing environment. As children work within the context of a noisy and distracting school and home environment the ecological validity within experimental contexts is questionable.

#### *Development trends in overgenerality and depression*

As mentioned earlier, closer analysis of effect sizes between depressed and non-depressed groups in years five and six revealed a developmental trend in the data which is of interest in terms of current theory and clinical practice. Effect size data indicated that in year five, children categorized as high or low in depression do not generate different numbers of specific or categoric memories on the AMT. Whereas, in year six, children with high depression scores produce slightly more categoric and slightly fewer specific memories than children with lower depression scores. In

contrast, Drummond (2005) who found reduced memory specificity in her cohort of seven to eight year old dysphoric children. As only two studies to date have explored children's AM one cannot draw any firm conclusions. However, taking these findings at face value, the results cast some doubt on the relationship between depression and overgenerality in this age group. This finding is relevant to Williams' (1996) Affect Regulation Hypothesis which states that OGM may serve as a protective factor in the short run but, in the long term, result in vulnerability to depression.

Why then would the usual OGM bias begin to appear in year six specifically? One hypothesis suggests that children become increasingly affected by the pressures of adolescence, developing new peer groups, testing social boundaries, and are faced with increasing demands on their social problem solving skills. With this phase comes the consolidation of personality styles, identity formation and increased self-focus (Harter, 1983) and also conflict around increasing independence. With this advanced development and increasing interpersonal conflict, defensive coping reactions may come into play, such as avoidance or rumination (Conte & Plutchik, 1995). This fits with the adult literature which increasingly points to the idea that AMS represents a multifaceted construct, possibly with many factors moderating its relationship with depression including social problem solving (Evans, Williams, O'Loughlin & Howells, 1992; Goddard, Dritschel & Burton, 2001), avoidant coping strategies (Kuyken & Brewin, 1995; Stokes, Dritschel & Bekerian, 2004; Raes, Hermans, Williams & Eelen, 2005), rumination (Ramponi, Barnard & Nimmo-Smith, 2004; Goddard, Dritschel & Burton, 1996) and working memory capacity (Goddard, Dritschel & Burton, 2001; Dalgleish, et al, in press). Further research that explores



these factors in child samples is needed to bring research in line with the adult literature.

Although the rationale for inclusion of the EI measure still appears to be robust, with the benefit of hindsight, I would have included a measure of narrower constructs that are more in line with the adult literature. For instance, the Impact of Events Scale (Horowitz, Wilner, & Alvarez, 1979) which includes avoidance and intrusions scales, and/or a measure of social problem solving such as the Means End Problem Solving Task (Platt & Spivack, 1975) may have more utility. In addition, while the research presented here found no association between the new EF paradigm (Drummond, 2005) and AM the original research suggests it is worthy of further investigation.

Research across wider age ranges in child populations could help shed light on issues that have arisen in the literature in adults. Williams' (1996) original theory proposed that children may persist in an overgeneral style typical of younger children in an attempt to regulate negative affect resulting from memories of aversive experiences (such as abuse). Debate exists over whether it is depression, trauma or a combination of the two that is related to OGM. Currently no study exists that utilises a two by two design aimed at exploring this relationship. It is important that this is addressed in research with adults but similar designs if applied to child samples might provide still further information. It is unfortunate that this could not be addressed by the research presented here but there are clear ethical problems when exploring trauma history in non-clinical populations.

To conclude, the body of literature on the AMT in adults is substantial. However, research on how OGM develops in childhood remains scant. Further research in this area, including a wider age range, could help clinicians understand the origins of information processing biases associated with depression and also enhance our understanding of these deficits in adults. Thus, informing interventions for depression sufferers across the whole life span.

### Implications for clinical practice

Despite failing to reach statistical significance, the findings of this study (particularly developmental trends in the data) provide information that is potentially clinically meaningful and requires further discussion. Future interventions could aim to increase memory specificity through encouraging parental narrative style as this is known to be associated with children's autobiographical memory development (Fivush, 1998; Haden, Ornstein, Ekerman, & Didow, 2001). This could potentially ameliorate vulnerability factors associated with overgenerality. Alternatively, interventions might be appropriately aimed at deficits related to OGM such as social problem solving (Pollock & Williams, 2001). Webster-Stratton programs (see Webster-Stratton & Hammond, 1998 for full review) incorporate both these elements to some degree. The "BASIC" parenting training programme focuses on teaching parents how to alter their behaviour maintaining contingencies, to improve skills in mutually reinforcing play interactions which encourages the use of non-directive narration of the child's play, improve the child's social problem solving and develop their effective negotiation strategies. Further research might show that increasing parent's skills in these areas has an impact on children's memory specificity.

Recent research in adults (Williams, Teasdale, Segal & Soulsby, 2000) had supported the effectiveness of Mindfulness Based Cognitive Therapy for depression. The eight week course, aimed at reducing avoidant coping strategies, was found to significantly reduce the number of categoric memories generated by respondents on the AMT.

Future interventions with children as well as adults might effectively employ mindfulness strategies to address OGM. Clinicians are beginning to develop and evaluate mindfulness based interventions for use with children. In addition, Kabat-Zinn and Kabat-Zinn (1998) have developed the first mindful parenting course which could prove to be a helpful.

Furthermore, evidence exists for the effective use of Dialectical Behaviour Therapy (DBT; Lineham, 1993) in the treatment of adolescents with emerging Borderline Personality disorder (Rathus & Miller, 2002; Katz, Cox, Gunasekara & Miller, 2004). DBT incorporates self-regulation and social skills training combined with mindfulness components to teach individuals to manage their feelings rather than avoiding or dissociating from distressing situations and memories. This may potentially provide fruitful avenues for clinical interventions aimed at reducing children's autobiographical memory deficits.

The finding that OGM was related to depression in only year six children might also suggest some need for caution in treating overgenerality in young children. If OGM is indeed a protective factor in younger children, the potential psychological cost in stripping away that protection could outweigh any benefits. Previous research has found that overgenerality rather than specificity of AM is related to a reduction in the frequency of parasuicidal behaviour (Startup, Heard, Swales, Jones, Williams &

Jones, 2001; Swales, Williams & Wood, 2001). Implications of this finding for the timing of therapy are vast. Interventions that aim to reduce overgenerality might be helpfully applied to older children not currently in a severely depressed state and at risk of parasuicidal behaviour.

In the literature on the effectiveness of interventions for PTSD there is growing evidence (Hammond, 1996) that moving away from the mainstay cognitive behavioural approaches towards more mindfulness based interventions is as effective but reduces the risk of re-traumatising the individual (Doob, 1992). One further possibility suggested by the findings presented here is that generalised memories about traumatic experiences are left untouched but that more detailed memories about positive events is encouraged.

In addition to the wider implications of this research, this work will also inform my own clinical judgements. My heightened awareness of the delicate balance between the protective nature of OGM and the vulnerability it may confer is an important development in my professional practice. In future, when assessing children and monitoring their progress through therapy I will be more inclined to take into account issues of re-traumatisation. Allowing children's accounts of trauma to be relatively vague, at least in the short term, may serve to protect them from high risk maladaptive coping mechanisms, for instance, parasuicidal behaviour. Whereas, in the longer term, after ensuring adaptive coping strategies are in place, guiding children to recall memories in enough detail to permit adequate problem solving could be beneficial. This is in keeping with Williams (1996) Memory Analogue Theory of problem

solving which states that recall of detailed memories analogous to the current problem situation is essential to the formation of effective solutions to that problem.

### Process/personal issues arising from the research

Conducting this research has challenged me in a number of ways. The journey has veered from exhilarating, at the initial conception of the ideas underlying the research to fear at the prospect of undertaking such a large project. Initial disappointments fell away to a race to prepare for the final write up with inevitable periods of excitement, fear and outright panic along the way.

### *The conception of ideas*

The planning stage of the project was a definite high point. Collaboration with my supervisor in forming a research strategy, in line with the adult literature, was exciting and intellectually stimulating. The original project incorporated my main clinical interests including post trauma reactions in children who have experienced abuse. Unfortunately, this early draft was rejected as ethical issues could not be addressed adequately in the restricted time available to carry out the project. In addition to my own disappointment at not being able to carry out the research I had a sense that I was re-abandoning the children that conducting this project could potentially help. However, the project we eventually settled on was equally inspiring.

### *Data collection*

Multiple re-drafts of the proposal (four in all) meant that a limited amount of time was available for data collection. This was both anxiety provoking and frustrating as it meant that sample sizes had to be restricted. Once underway, data collection was

another positive experience. Liaising with school staff was uplifting and heartening as everybody involved was fascinated by the research, unceasingly supportive and happy to give up their time. Working with the children, who were extremely open and eager to help with the research and also to learn about the project, was a particular high point.

Data collection did, however, bring with it anxieties. Through the course of the research a small number of children spontaneously disclosed feeling significantly depressed at times. This was a test of my clinical capabilities and also the rigour of the design of our proposal in detailing the appropriate handling of such eventualities. Thankfully, this challenge was met with success. On reflection, I feel that dealing with difficult clinical issues such as this is one of my strengths as a clinician. In addition, the experience of liaising with the school's excellent pastoral staff was motivating and informative.

One further source of discomfort during data collection was that ethical considerations in designing the research demanded that all measures were anonymised prior to scoring. It was expected that a proportion of the children would fall within the clinical range for depression on the Children's Depression Inventory. In collecting the data I had a strong sense that, although I would not know at any point which of the children fell in the clinical range, those children had disclosed their feelings on paper. However, due to the anonymisation procedure, I would never get the opportunity to offer help to these children. This highlights the difficulty of conducting clinical research on non-clinical populations who were already involved with services. In future research of this type I might include, with the initial information sheets, a list of

clinical services that families could access should they have concerns about their child.

### *Data analysis*

As data collection drew to an end, I was filled with a sense of achievement, together with anxious foreboding about writing up the project, which is not a personal strength. Data analysis was an exciting time but the lack of significant findings was disappointing. Maintaining motivation to continue was a struggle, particularly during this period but the value of the research, despite null findings, kept me going. A lack of significant findings is, after all, a finding although many peer reviewed journals still fail to reinforce this. Support from my supervisor was invaluable and confirmed for me the importance of collaboration in any research I might conduct in the future.

### *The write up*

The final stages were spent hurriedly preparing for the final write up and worrying whether I would have the strength to last the distance. This period was, for me a significant low as limited contact with the rest of my cohort due to continued pressures of work on placement, meant exhaustion and feelings of isolation kicked in. At the same time, the help and support I have received from friends, family and colleagues has been invaluable and has undoubtedly got me through.

I feel that completing this research has allowed me to hone my skills as a scientific practitioner and made me more attuned to spotting research opportunities in the future. In addition, I feel far more inclined to embark on the development of

experimental designs and have now got the confidence to approach ethics committees and actually carry out the research.

Having survived the process and the preceding two years on the clinical course, I am now beginning to look to the future with a confidence I did not have before. Completion of this thesis marks a significant turning point and a progression in identity and role. Over the course of conducting this large scale research project my personal development has been vast and I now feel ready to call myself newly qualified Clinical Psychologist.



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## **SECTION FIVE – WORD COUNT**

## Word counts

<b>Title</b>	<b>10</b>
<b>Abstract</b>	<b>300</b>
<b>Ethics proposal</b>	<b>5090</b>
<b>Literature review</b>	<b>5640</b>
<b>Research paper</b>	<b>5990</b>
<b>Discussion paper</b>	<b>2965</b>
<b>Total of the above</b>	<b>19995</b>
<b>References, tables and Other appendices</b>	<b>6264</b>
<b>Total number of words</b>	<b>26259</b>