MEMORY SPECIFICITY IN DEPRESSION: THE EFFECTS OF SELF VERSUS OTHER REFERENT FOCUS

By

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Abstract

A number of studies have found that individuals with past or current depression are poor at recalling specific autobiographical memories (e.g., Brittlebank, Scott, Williams, & Ferrier, 1993; Williams & Dritschel, 1988; Williams & Scott, 1988; Williams, 1996). The affect regulation hypothesis (Williams, 1996) proposed to underlie the lack of specific autobiographical memories, as well as evidence from research on the negative memory biases associated with depression, suggests that self-focus enforced by the self-referent nature of autobiographical memory may moderate memory specificity in depressed individuals. This study aimed to (a) replicate previous findings regarding the overgeneral memory bias in depression, (b) empirically examine the effect of focus in the overgeneral autobiographical memory bias and, (c) explore the relationship between depressive symptom severity and memory specificity in individuals who have never been depressed. In the present study 11 either formerly or currently depressed and 47 never-depressed female undergraduate volunteers were asked to recall specific self-referent and other-referent memories in a positively and negatively toned cue word paradigm. A non-significant trend was observed that depressed individuals tend to report fewer specific self-referent memories than those who have never been depressed. Furthermore, memory specificity increased only among participants with past or current diagnosed depression when they were cued to retrieve memories about other people rather than about themselves. Regression analysis of memories in both the entire study sample as well as among only those who have never experienced depression revealed that neither depressive symptoms severity nor global self-esteem predicted memory specificity. Results are discussed with respect to the affect regulation hypothesis and implications of present findings for the treatment of depression.

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Introduction

Overgeneral Autobiographical Memory Bias

When an individual recalls a specific event from their past they normally move seamlessly through a hierarchy of descriptions and representations. When presented with a cue, individuals will first access higher, more general descriptions before moving fluently to more specific and elaborate memories (Conway & Pleydell-Pearce, 2000). However, research indicates that in individuals with depression this retrieval process may be disrupted and the transition from general to more specific memories about the self may not be as seamless as the transition found in healthy individuals. An overgeneral autobiographical memory style in depression was first observed during a mood congruent memory experiment using a cue word paradigm (Robinson, 1976) with individuals who recently attempted suicide by overdose. Despite investigators' instructions to recall specific events, the suicidal patients' memories were consistently overgeneral in response to negatively, and especially positively, valenced cue words compared to non-suicidal control participants (Williams & Broadbent, 1986).

Overgeneral memories refer to memories about people, places, or events which last longer than 1 day. In Williams and Broadbent's study, if presented with the cue word *happy*, suicidal patients answered with a general response of "when I am playing squash" while control participants provided more specific memories such as "the day I left to go on holiday." Soon after Williams and Broadbent's initial report, Williams and Dritschel (1988) replicated these findings in self-poisoning suicide attempters. The researchers found the overgeneral memory style in not only actively suicidal patients, but also former suicidal patients up to 14 months after their last attempt.

Subsequent research using the Autobiographical Memory Test (AMT; Williams & Broadbent, 1986) has extended these findings of overgeneral autobiographical memory in suicidal patients to clinically depressed individuals (Kuyken & Dalgleish, 1995; Moore, Watts, & Williams, 1988; Williams & Dritschel, 1988; Williams & Scott, 1988). The AMT is a cue-word paradigm requiring participants to recall specific memories about themselves in response to a standardized list of words matched for emotionality and word frequency. Williams and Scott (1988) studied autobiographical memory recall in 20 inpatients diagnosed with Major Depressive Disorder. They found that the depressed patients recalled specific memories only 40% of the time, while non-depressed control participants matched for age, education level, and semantic processing speed provided specific autobiographical memories 70% of the time. Kuyken and Dalgleish (1995) reported similar findings and provide evidence that the overgeneral memory style in depressed individuals may not be dependent upon the valence of the cue word. In their study, compared to non-depressed controls, overgeneral memories in depressed patients emerged in response to both positively and negatively valenced cue words. The absence of a significant cue word valence effect in autobiographical memory bias has since been reported in a number of studies (Brittlebank, Scott, Williams, & Ferrier, 1993; Evans, Williams, O'Loughlin, & Howells, 1992; Henderson, Hargreaves, Gregory, & Williams, 2002; Kuyken & Brewin, 1995; Moore et al., 1988).

Overgeneral autobiographical memory does not appear to be unique to individuals experiencing clinical depression. Vietnam War veterans diagnosed with combat related Post-Traumatic Stress Disorder (PTSD) also show deficits in recalling specific autobiographical memories, and even those memories not associated with combat stress tend to be overgeneral (McNally, Lasko, Macklin, & Pitman, 1995; McNally, Litz, Prassas, Shin, & Weathers, 1994).

Investigating memory specificity in depressed versus non-depressed new mothers, Croll and Bryant (2000) reported that the severity of postnatal depression was positively correlated with degree of overgeneral memory autobiographical memory retrieval. Women diagnosed with Borderline Personality Disorder (BPD) also recall proportionately more overgeneral than specific memories compared to matched non-psychiatric controls (Jones et al., 1999; Startup et al., 2001).

Early experiences of abuse have also been associated with overgeneral autobiographical recall. Kuyken and Brewin (1995) recorded the autobiographical memories of clinically depressed women with and without a history of childhood sexual abuse. They found that patients who had experienced such abuse provided significantly more overgeneral autobiographical memories in response to both positive and negative cue words than depressed women without a history of childhood sexual abuse. Recent researchers have extended these findings and demonstrated that the relationship between early sexual abuse and overgeneral memory is independent of mood disturbance and depressive states (Henderson et al., 2002). Similar findings have been reported in individuals who have experienced physical abuse. Hermans and colleagues reported that in a group of depressed adults, the self-report severity of physical abuse was negatively correlated with the number of specific memories, independent of the severity of the patients' depression severity (Hermans et al., 2004). Eating disorder patients have also been shown to produce more overgeneral memories than healthy controls and within the eating disorder patients, self-reported parental abuse was positively correlated with overgeneral memory to negative cues, even after controlling for depression levels (Dalgleish et al., 2003).

Empirical evidence suggests that overgeneral recall of autobiographical memories in depression may not be state dependent. Williams and Dritschel (1988) reported that in their sample of current and former self-poisoning overdose patients, autobiographical memory

specificity did not differ between the two groups. However, both groups were significantly less specific in their autobiographical memories than controls. Brittlebank and colleagues (1993) recorded depressed patients' autobiographical memory specificity at initial assessment, and after 3 and 7 months of antidepressant treatment. They found that even in those patients whose mood improved considerably over the course of treatment, there was no shift towards greater autobiographical memory specificity over time. Furthermore, overgeneral recall of positive autobiographical memories at baseline predicted depression levels at follow-up, accounting for one` third of the variance of the outcome depression scores. Only 1 of the 9 patients who responded at baseline with overgeneral memories to positive cues was recovered at 7 months, while 8 of the 10 patients who recalled specific memories to the same cues at baseline were recovered at follow-up.

Suggested Mechanisms Underlying Overgeneral Autobiographical Memory

Williams (1996) proposed that the overgeneral autobiographical memory found in depressed individuals may act as an affect regulating mechanism learned in childhood and carried over into adulthood. According to this hypothesis, an overgeneral style of recall begins in order to avoid the retrieval of negative events in those individuals who are hypersensitive to the affective components of specific memories. In order to prevent extreme emotional arousal, memory searches by these vulnerable individuals are terminated when a mnemonic cue gives rise to a memory high in affect. Consequently, only the intermediate and less specific description of the event is recalled. According to Williams, these sensitive individuals subsequently become stuck in a process of "mnemonic interlock" whereby memory retrieval remains fixed within an over-elaborated categoric level. Potentially emotionally charged memories are perpetually recalled by shifting horizontally within a network of other categoric self-referent memories

rather than vertically to more specific memories as is done by healthy individuals. In time, this type of overgeneral recall becomes a habitual, trait-like cognitive style which, according to Williams, eventually affects the processing of further self-related events and encourages a more generic network of self-referent descriptions.

There is empirical evidence supporting Williams' (1996) affect regulation hypothesis of overgeneral autobiographical recall. As noted above, Kuyken and Brewin (1995) reported that more overgeneral memories are recalled by depressed women with a history of sexual abuse than women with depression alone, independent of severity of depression. In that same study the authors also observed that among women reporting a history of abuse, high levels of avoidance on the Impact of Events Scale (Horowitz, Wilner, & Alvarez, 1979) were positively correlated with overgeneral autobiographical memory retrieval. In their study of depressed adults, Hermans and colleagues (2004) reported that the younger the victim at the time of the abuse and the more distressing their perception of the event, the less specific their autobiographical memories. Vietnam War veterans with PTSD reported less specific memories than veterans without PTSD. Even more, those veterans with PTSD and a demonstrated greater fixation on the war (exemplified by still wearing war-regalia and fatigues) displayed even greater difficulty in retrieving specific memories, yet veterans with PTSD who did not display the same fixation performed comparable to control participants (McNally et al., 1995). Similarly, among women diagnosed with BPD, high levels of trait dissociation are also reported to be positively correlated with more overgeneral autobiographical memories (Jones et al., 1999). Jones and colleagues hypothesized that the relationship between dissociation and self-reports of traumatic experiences is mediated by deliberate attempts to avoid memories.

While correlational research cited above lends support to the affect regulation hypothesis for overgeneral memory, it has only been empirically tested in one published experiment. Raes, Hermans, de Decker, Eelen, and Williams (2003) administered the AMT to predetermined high-specificity and low-specificity participants and tested the effects of a frustration puzzle task on their respective AMT scores. The authors report a two-way group by frustration interaction. Those in the high-specificity group experienced a greater increase in distress in relation to the frustration task (described by the authors as a negative event) relative to those with low-specificity AMT scores. The presence of depression or depressive symptoms was not considered in this study so generalizing results to depressed or dysphoric individuals is not possible. However, this study suggests that less specific (i.e., more overgeneral) autobiographical memory may help both depressed and non-depressed individuals to avoid memories which might summon intense affect.

Affect Regulation and Self-Focus in Depression

In depressed individuals, the need for affect regulation during autobiographical memory searches may be especially related to the self-focused nature of the task. According to Conway and Pleydell-Pearce (2000), autobiographical information is encoded through the nature of the working self and its goals. The authors integrate Higgins' (1987) theory that the self is separated into three major domains: the actual self as a somewhat accurate description of the self or at least how one views the self as it really is; the ideal self, comprising what one wishes the self to be; and the ought self, which refers to what one believes their parents, society, and significant others think they should be. If a discrepancy exists among the three selves, the working self emerges and creates personal goals aimed at reducing the discrepancy. Carver and Scheier (1998) suggested that negative affect is a consequence of an individual's realization that the likelihood

of actually attaining one's ideal self is minute or the rate of progress towards this ideal is slower than desired. A situation such as an autobiographical memory task where one is required to focus upon the self may potentially increase negative affect in individuals who perceive a greater discrepancy between their actual and ideal selves. Overgeneral recall may be a product of a depressed individual's heightened need for affect regulation in conditions of self-focus where the discrepancy between their actual and ideal selves is made salient. It thus follows that in external-focus conditions where the actual versus ideal self is not made salient, an affect regulating mechanism such as overgeneral memory may not be activated.

Evidence suggesting the important role of focus in overgeneral memory among depressed individuals comes from research investigating ways to reduce this particular style of recall. Williams, Teasdale, Segal, and Soulsby (2000) demonstrated that Mindfulness-Based Cognitive Therapy (MBCT) served to reduce overgeneral autobiographical memory in a group of formerly depressed patients. The investigators tested the autobiographical memory specificity of a group of formerly depressed individuals before and after approximately 2 months of either class-based instruction in MBCT or treatment as usual (TAU). MBCT encourages patients to notice specific aspects of their environment and to allow cognitions to flow without suppression or judgement. Approximately 4 months after termination of treatment, formerly depressed patients in the MBCT group recalled significantly fewer categoric (i.e., overgeneral) memories than the TAU group. These results suggest that overgeneral memory can be modified over time through treatment specifically aimed at encouraging individuals to concentrate on external aspects of their environment. However, Williams and colleagues also report that posttreatment memories were from more recent time periods than pre-treatment memories. Both treatment groups recalled memories from less than 6 months prior to posttreatment testing. That is, they were

more specific when recalling events which occurred during or after intervention. Thus, the possibility that the change in memory specificity in the MBCT group was due to a shift in coding rather than in retrieval cannot be ruled out, leaving the matter of whether the overgeneral recall (as opposed to overgeneral encoding) can be reduced still in need of exploration.

Externally focused distraction research paradigms begin to address this question, suggesting that distraction may be successful in reducing already encoded overgeneral autobiographical memories in depressed individuals. Watkins, Teasdale, and Williams (2000) instructed depressed and dysphoric participants to concentrate on a series of mental images such as "the shape of a large black umbrella" or "a raindrop sliding down a pane of glass" for 8 minutes and found reduced proportions of overgeneral memories on subsequent autobiographical memory tests. However, in the rumination condition, when participants were instructed to focus on their symptoms, emotions, and themselves prior to autobiographical memory recall, overgeneral memory was maintained. In light of these results, Watkins and Teasdale (2001) more specifically investigated the effect of the components of rumination in overgeneral autobiographical memory by separating rumination into two components: self-focus and analytic thinking. Following an initial administration of the AMT, depressed volunteers were instructed to concentrate on one of four lists of items for 8 minutes. High analytical, high self-focus thinking was induced by instructing participants to "think about what your feelings might mean." Participants in the low analytical, high self-focus condition were asked to "concentrate upon experiences of physical sensations in your body." The low analytic, low self-focus condition required participants to think, for example, about "the shape of a large black umbrella." Those in the high analytic, low self-focus condition were required to "think about trying to understand the world you live in." Participants then completed manipulation checks and a second AMT

immediately followed. Results revealed an interaction of time (pre-manipulation AMT vs. post-manipulation AMT) and analysis (high vs. low) on proportion of overgeneral memories recalled. Depressed participants in the low analytical condition recalled significantly fewer proportions of memories that were categoric: that is, they became more specific. As there was no similar interaction or main effect with self-focus, the authors suggested that the results of their study lend support to the notion that analytical thinking in general, rather than only self-focused analytical thinking, may be fundamental to overgeneral autobiographical memory recall. Watkins and Teasdale suggest that this is evidence for the view that analytical thinking is a more important contribution to overgeneral memory than is self-focus. However, the authors acknowledge that recalling autobiographical memories implicitly involves self-focus. In their study the manipulation checks occurred immediately after the attention tasks, and while they appear to have produced the intended effects, the very nature of the autobiographical test may have attenuated the effects of the manipulations. In particular, the main task of recalling autobiographical information brought participant's attention back to the self and back to self-referent memories, regardless of the manipulation condition. While Watkins and Teasdale's study lends support to the notion that analytic thinking may be important in categoric memories, the question still remains as to whether this overgeneral recall is specific only to self-referent memories, or if it also relates to external, other-focused events.

Self-Focus and the Negative Memory Bias in Depression

Self-focus and, more specifically, self-reference appears to potentiate depressed individuals' negative biases in recalling past events. Synthesizing previous findings regarding the negative memory bias for life events found in depression (Blaney, 1986; Clark & Teasdale, 1982), and studies reporting that depressed individuals tend to engage in greater levels of self-

focus than non-depressed people (Ingram, Lumry, Cruet, & Sieber, 1987), Pyszczynski , Hamilton, Herring, and Greenberg (1989) examined the role of self-focused attention on memory bias in sub-clinically depressed college students. Those depressed individuals in the self-focus induced condition who were assigned a story writing task using words such as "I, mirror, alone, me" (Fenigstein & Levine, 1984) recalled less positive memories than non-depressed individuals in the same condition. This differential performance between depressed and non-depressed individuals was not replicated in conditions of external focus where participants were instructed to write a story using the words "he, picture, together, and him." To investigate conditions of even lower levels of self-focus, the authors added a between participant factor where participants were randomly assigned to recall events about themselves or other persons they knew. Results indicated that the negative memory bias occurred only among depressed participants who were self-focused and asked to recall self-referent events. In other words, the tendency for depressed individuals to recall more negative events than non-depressed individuals was eliminated when their attention was focused away from themselves. The authors explained these findings in terms of a schema deactivation process. Cognitive theories of depression posit that depressed individuals hold a negative self-schema that guides the processing of self-referent events. Pyszczynski et al. (1989) provide evidence that accessing information outside of the self-schema by encouraging depressed individuals to focus away from the self and onto other-referent information can reduce the negativity of the information. The role of self-focus in the negative memory bias may provide insight into mechanisms underlying overgeneral memory bias. To date, the effect of encouraging other-referent memories on the specificity of those memories has not been investigated in either depressed or non-depressed individuals. This provided the impetus for the present study.

The Present Study

The present study sought to replicate previous findings that autobiographical memory in depressed (Goddard, Dritschel, & Burton, 1996; Kuyken & Dalgleish, 1995; Wessel, Meeren, Peeters, Arntz, & Merckelbach, 2001; Williams & Scott, 1988) and formerly depressed (Brittlebank et al., 1993) individuals is less specific than autobiographical memory in those who have not experienced depression. This study also aimed to examine the effect of focus on memory specificity in depressed individuals, and to examine if this overgeneral bias is relevant only to self-referent memories, or if it is also present in externally-referent recall. According to the affect regulation hypothesis of overgeneral autobiographical memory recall in depressed individuals (Williams, 1996), if a potentially emotionally charged cue is presented to an emotionally sensitive individual, the memory search will remain at an overgeneral level and a specific memory will not be recalled in response to the cue. In depressed individuals, any information triggering the self-schema and their actual/ideal discrepancy may contribute to overgeneral recall. Considering the theoretical and empirical evidence regarding the affect regulating mechanisms behind overgeneral memory, and findings reported by Pyszczynski and colleagues (1989) that the negative memory bias found in depression is eliminated in conditions of minimal self-focus, it was hypothesized that participants with past or current clinical depression would recall proportionally fewer specific memories for self-referent events than other-referent events. Given the mixed results regarding the effect of the valence of the cue words on autobiographical memory recall, combined with the lack of research on memory specificity for other-referent memories, no specific prediction for the effect of cue word valence was made in this study (Brittlebank et al., 1993; Evans et al., 1992; Henderson et al., 2002; Kuyken & Brewin, 1995; Moore et al., 1988). The second aim of the present study was to

explore the relationship between depressive symptom severity and memory specificity in individuals who do not meet criteria for current or past clinical depression. As noted, research indicates that levels of autobiographical memory specificity in diagnostically depressed individuals is largely independent of the severity of their self-report depression scores (Brittlebank et al., 1993; Kuyken & Brewin, 1995; Wessel et al., 2001). Little is known, however, about the relationship between the severity of depressive symptoms and memory specificity in individuals who have never experienced an episode of clinical depression. Using a regression approach, the relationship between depressive symptom severity and memory specificity in response to positive and negative cue words in conditions of self- and other-focus was analysed. In addition, studies involving non-clinical samples have demonstrated that global self–esteem appears to influence a number of memory related factors such as accuracy (Story, 1998), recall of state self-esteem at the time of the events (Christensen, Wood, & Barrett, 2003), and the hypothesized affect regulatory function of autobiographical recall (Setliff & Marmurek, 2002). In light of these findings, in addition to depressive symptom scores, global self-esteem was also considered in the analysis.

Method

Participants

Two hundred and thirty-two females enrolled in Introductory Psychology or Social Psychology at Lakehead University completed the screening questionnaire package[1]. From the respondents, 62 females were selected for the memory experiment. Participants were awarded one Psychology course bonus point for completion of the screening package and an additional

[1] Due to the requirement of an unrelated investigation conducted in concurrence with the present study, only females were approached for participation.

bonus point for their participation in the memory experiment. The names of all participants were also entered into a monetary prize draw.

Measures

Beck Depression Inventory-Second Edition (BDI-II; Beck, 1996; see Appendix A). The self-report inventory contains 21-items measuring the severity of depressive symptomology. Each item consists of four short self-referent statements describing how the individual has felt over the past 2 weeks. Responses are rated on a four-point scale and a total score of the Inventory is determined by summing the ratings for the 21 items. Possible scores range from 0 to 63 with higher scores indicating a greater level of depression. Beck and colleagues recommend that the cut-off scores for the BDI-II be based upon the purpose of the administration. The authors report mean BDI-II scores of 12.56 for undergraduate college students, and 26.57 for individuals diagnosed with a mood disorder according to the Structured Clinical Interview DSM-III-R (Spitzer, Williams, Gibbon, & Frist, 1990). Internal consistency coefficient alphas for psychiatric outpatients and undergraduate college students are .92 and .93, respectively. One-week outpatient test-retest correlation was .93 (Beck, 1996).

Brief Depression Screener (see Appendix B). The screener consisted of six questions addressing participants' possible current and past affective, cognitive, and somatic symptoms of depression. The screener also inquired about the age of onset and duration of these symptoms. Items were adapted from the Canadian Community Health Survey (Statistics Canada, 2002). [2]

[2] This screener was originally intended as an additional tool to the BDI-II to aid in the selection of individuals into the memory experiment who would likely meet diagnostic criteria for current or past major depression. However, as approximately 40% of the 232 respondents to the screener reported that they had experienced at least one of the depressive symptoms for more than 2 weeks, and approximately one forth had experienced three or more of the symptoms for two weeks or longer, this screener did not appear to achieve specificity in determining those participants with a history of depression. Thus, participants for the memory experiment were recruited based upon BDI-II scores alone. Past or current clinical depression was assessed using a more stringent criteria (the SSPQ-X described in *Measures*) at the time of the memory experiment.

Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1989; see Appendix C). This 10-item measure of global self-esteem requires respondents to determine whether statements apply to them on a 4-point scale, from "strongly agree" to "strongly disagree." Items 1, 3, 4, 7, and 10 were reversed scored. Higher total scores indicate higher self-esteem. In a large sample of high school students, internal consistency was .77 (Rosenberg, 1965) and over 7 months test-retest reliability of the measure was .73 (Wylie, 1989).

Valence and Imageability Word List (see Appendix D). The word list provided in the participant screening package consisted of 47 words used in Williams' (n.d.) Autobiographical Memory Test (AMT), and a further 68 words used in Cassin and von Ranson's (2003, June) word lists for testing attentional biases in eating disorders. The cue words taken from the AMT were controlled for frequency in the English language and were designated as either negatively or positively valenced. Cassin and von Ranson (2003, June) selected their 68 word stimulus set according to character length, syllable length, linguistic frequency, familiarity, and valence. The stimulus words employed in the present investigation were designated as non-body/positive, non-body/negative, body/positive or body/negative according to the grouping assignment determined in previous research (Brittlebank et al., 1993; Cassin & von Ranson, 2003, June). Participants rated each of the words for valence on a 7-point Likert scale ranging from -3 (*very negative*) to +3 (*very positive*). Participants also rated the words for imageability from 1 (*low imagery*) to 7 (*high imagery*). There were 4 different word lists. Each list contained the same 115 words presented in a different order to control for order effects on ratings.

Memory Test. Modeled after Williams' (n.d.) AMT, the research paradigm used in this study consisted of a total of 20 cue words derived from participants' responses on the valence and imageability word list provided in the screening package: five non-body related words with

high positive ratings (*bright, excited, faithful, joy, peaceful,*); five non-body related words with high negative ratings (*failure, hopeless, misery, rejected, tragic*); five body related words with high positive valence ratings (*delicate, lean, slender,slim, thin,*); and five body related words with high negative valence (*enormous, flabby, lard, skeletal, tubby*). Since autobiographical memory specificity has been shown to be influenced by the imageability of cue words (Williams, Healy, & Ellis, 1999), all of the words selected for the memory test were controlled for imagability ratings. The 20 selected words were randomly presented on two occasions to each participant. Each cue word was presented one at a time on a computer monitor (see *Memory Experiment*).

Structured Clinical Interview for DSM-IV-TR Screen Patient Questionnaire-Extended (SSPQ-X; First, Gibbon, Williams, & Spitzer, 2001). The SSPQ-X is a self-report, computer administered and scored version of the Structured Clinical Interview for DSM-IV Axis I disorders. The entire assessment contains 589 questions that, through a detailed branching algorithm, provide the researcher with a report which lists diagnoses as "likely," "unlikely," and "contradictory" for Mood Disorders, Psychotic Symptoms, Eating Disorders, Substance Use Disorders, Anxiety Disorders, and Somatoform Disorders. The present study screened for "likely" current and past Mood Disorders.

Design and Procedure

Participant screening. The experimenter personally addressed four Introductory Psychology 1100 sections and one Social Psychology class, briefly outlined the purpose and procedures of the study, and made available to the female students the questionnaires package and informed consent sheets to be completed and returned at the next scheduled class (see Appendices E and F). Each questionnaire package contained the BDI-II (BDI-II time 1) the brief

depression screener, the RSE and one of the four list of words to be rated for valence and imageability. The Concerns for Shape and Weight Scale (Davis, 1993) was also included for the purposes of another study.

Memory experiment. The experiment consisted of a one-between and two-within participant design. The between-group variable was depression; the presence versus absence of a current or past episode of clinical depression as determined by the SSPQ-X. The within-participant variables were memory focus (self vs. other) and cue word valence (positive vs. negative cue words). Participants for the memory experiment were selected from the initial pool of women who completed the screening questionnaires. Participants were recruited into one of two experimental groups based upon BDI-II time 1 scores. In an effort to achieve two distinct depression groups, participants with the most extreme BDI-II time 1 scores (highest and lowest) were approached for participation. Participants were contacted via telephone or e-mail by the researcher and scheduled for a 1-hour appointment. The study was described to them as one investigating mood and memory.

Upon arrival at the laboratory, participants signed an informed consent form (see Appendix G), sat in front of the computer monitor and immediately began the memory experiment. Participants were randomly allocated to one of two versions of the memory experiment in an effort to counterbalance the order of focus trial. One half of the participants were instructed to use the 20 cue words to recall self-referent, autobiographical, memories followed by a second set of instructions directing participants to use the same set of cue words for other-referent memories. The other one half of the participants were instructed to recall other-referent memories followed by self-referent autobiographical memories. Participants had up to 30 seconds to respond to each word. After 30 seconds the computer monitor automatically

displayed the next randomly ordered word. If the participant completed their response before the allocated time, they could press the space bar to advance to the next word. Digital voice recording of participants' memories spoken aloud began as soon as the practise trails commenced and continued for the duration of the experiment.

An experimenter, blind to the participant's depression group membership, read the memory test instructions aloud to participants (see Appendix H for self- and other-referent instructions). Four practise trials with feedback were conducted in person and consisted of one of each of the four types of words presented in the memory tests; *proud* (non-body positive), *awful* (non-body negative), *petite* (body-related positive), and *chunky* (body-related negative). The experimenter provided feedback (e.g. "can you think of a specific event?") until the participant gave a specific memory indicating the task was understood. Upon completion of the practice trials, the experimenter reviewed the instructions for the memory experiment, reminded the participant to be as specific as possible in their memory responses, and left the room while the participant completed the experiment. The same procedures, with corresponding instructions for self- or other-reference, and practise trials were used for the second condition. The time required to administer both conditions of the memory experiment, including the introduction to the experiment, consent, and practise trials, was approximately 30 minutes. Following the memory experiment, participants' hands were scanned onto a computer for the purposes of an unrelated study. Participants were then presented with the SSPQ-X (First et al., 2001) computer program. The time to complete the SSPQ-X was approximately 15 minutes. Due to the fact that up to one month time lapsed between some of the participants' completion of the first BDI-II time 1 in the screening package and the memory experiment, all participants completed a second BDI-II (BDI-II time 2). The Personal Attributes Questionnaire (PAQ; Spence & Helmreich,

1978) was also completed for an unrelated study. Participants were debriefed, thanked for their participation, and provided with a sheet listing local mental healthcare agencies and contact numbers should they wish to seek professional consultation (see Appendix I).

Scoring the memory test. Participants' responses were recorded directly onto a voice recorder and subsequently rated by an independent rater who was blind to the participants' depression group membership and the purpose of the study. A second rater, independently rated 63% of the responses. Memory responses were categorized into three types: specific, an event that occurred at a particular place and time that lasted no more than 1 day (e.g., "the day I got my exam results"); categoric, a summary of repeated events (e.g., "going to the bar with my friends"); or extended, taking place over a period of time longer than 1 day (e.g., "my vacation in Spain last year"). As directed by Williams (n.d.), responses were also recorded as semantic associations if the participant responded with a statement that was not a memory (e.g., "the sun" to the cue word *bright*), and as an omission if the participant failed to provide a response.

Following Brittlebank et al. (1993), Watkins et al. (2000), and Williams & Broadbent (1986), the different types of memory responses were analysed as the proportion of the number of memories recalled. In the present study, the proportion of specific memories recalled by the participants served as the dependent variable: that is, the number of specific memories divided by number of specific plus categoric plus extended memories. Omissions and semantic associations were not included in the calculations of the proportions.

Results

Data Preparation

Participants ($N = 232$) completed the screening questionnaire package. In six cases, the occasional missing BDI-II time 1 items were prorated according to the participant's mean score

rounded to the nearest whole number. Eleven cases were missing more than 10% of the RSE items and were excluded from the RSE analysis. Six cases were each missing 10% of the RSE items, which were replaced with the mean of the completed RSE items across the case. Valence and imagability ratings for the 20 words chosen for the memory test are presented in Table 1.

Sixty-two participants took part in the memory experiment. Memory data from four participants were excluded from analysis. Three participants were removed from analysis due to technical error in voice recording or the computerized slide show of cue words. Memories provided by a fourth participant whose first language was not English were deemed too difficult to understand by the raters. A further six participants failed to respond to one or two (2.5-5.0%) of the cue words in the memory test because they pressed the space bar too quickly to respond before the next cue word appeared. However, as the dependent variable was analysed in proportions (the number of specific memories recalled divided by the total number of memory responses), memories from these six individuals were retained in the analyses. Thus, data from 58 participants were included in the analyses.

Memory Experiment

Characteristics of participants. Mean age, BDI-II time 1, RSE, and BDI-II time 2 scores for all participants who completed a screening questionnaire, those in the depressed group of the memory experiment, and those in the never-depressed group of the memory experiment are presented in Table 2. The depressed group membership was defined by participants' SSPQ-X "likely" diagnosis of Major Depression current (n = 5), Major Depression past (n = 5), or Mood Disorder Due to a General Medical Condition Current (n = 1). The never-depressed group (n = 47) consisted of participants who did not meet the "likely" criteria for the above disorders as determined by the SSPQ-X.

Table 1

Valence and Imagability Ratings for Memory Test Stimuli

Cue words	Valence *n*	Valence *M (SD)*	Imagability *n*	Imagability *M (SD)*
		Positive		
Non-body				
Bright	226	2.2 (0.9)	225	5.1 (1.8)
Excited	222	2.1 (1.0)	223	5.5 (1.5)
Faithful	226	2.5 (1.0)	226	3.9 (2.0)
Joy	224	2.3 (0.8)	224	5.0 (1.7)
Peaceful	226	2.3 (1.0)	223	4.9 (1.8)
Body				
Delicate	225	1.2 (1.2)	225	4.7 (1.6)
Lean	225	1.3 (1.4)	224	4.8 (1.7)
Slim	225	2.2 (1.3)	227	5.5 (1.5)
Slender	223	2.1 (1.3)	223	5.4 (1.5)
Thin	227	1.0 (1.4)	227	5.7 (1.6)
		Negative		
Non-body				
Failure	224	-2.3 (1.0)	225	3.7 (2.0)
Hopeless	227	-2.0 (1.0)	226	3.5 (1.7)

Misery	224	-2.2 (1.0)	224	3.8 (2.0)
Rejected	227	-2.2 (0.9)	226	3.9 (2.0)
Tragic	227	-2.3 (1.0)	226	4.2 (2.1)
Body				
Lard	222	-1.9 (1.2)	222	4.6 (2.1)
Enormous	225	-1.7 (1.3)	224	5.3 (1.9)
Flabby	226	-1.9 (0.9)	225	5.3 (1.6)
Skeletal	225	-1.8 (1.2)	224	5.3 (2.0)
Tubby	225	-1.8 (1.2)	224	4.9 (1.8)

Note. Variables represent means (standard deviations) for each word. Valence ratings: -3 = *very negative*, +3 = *very positive*. Imagability ratings: 1 = *low imagery*, 7 = *high imagery*.

Rater agreement. Cohen's kappas for interrater agreement for the memory categories specific, overgeneral (categoric and extended), semantic association, and omission ranged between .58 (*excited*, self-referent) to .93 (*lean*, other-referent), with an overall mean kappa of .76. Kappas for each of the words rated are presented in Table 3. This is slightly below agreement levels reported in previous research using the AMT with reported Cohen's kappas ranging from .62 to .86 for each cue word (Wessel et al., 2001), to single kappas of .78 (Singer & Moffitt, 1991), .87 (Goddard et al., 1996), .88 (Watkins & Teasdale, 2001), and .93 (Henderson et al., 2002). [3]

Memory specificity in depressed versus never-depressed participants. To test the hypotheses that (a) participants with current or past depression would be less specific than never-depressed participants in their self-referent memories, and that (b) participants with current or past depression would be more specific in other-referent memories relative to self-referent memories, a 2 (depression: past or current vs. never-depressed) X 2 (focus of memory: self vs. other reference) X 2 (valence of the cue words: positive vs. negative) mixed design ANOVA was performed on participants' proportion of specific memories (number of specific memories divided by the total number of memories reported). The means and standard deviations for the proportions of specific memories as a function of the three independent variables (depression group, focus, valence) are presented in Table 4.

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[3] Previous studies involving autobiographical memory tests have employed a number of ways of assessing rater agreement; reporting interrater agreement kappas for single event or summary memories (Singer & Moffitt, 1991), memories rated as specific or categoric (Watkins & Teasdale, 2001), specific, categoric or extended (Goddard et al., 1996), specific and generic (Henderson et al., 2002), or no details as to which categories were used in the analysis (Wessel et al., 2001). Semantic association response included in the present study's rater-agreement analyses have never been reported. The present study's slightly smaller kappa, relative to the studies cited above, may be due to the more conservative method of evaluation, which in addition to specific, overgeneral, and omissions, also included semantic association responses.

Table 2

Participant Characteristics

Variables	Screening Questionnaire (n = 232)	Depressed (n = 11)	Never-depressed (n= 47)
Age	21.04 (5.86)	22.36 (5.55) [b]	21.32 (6.44)
BDI-II time 1	11.84 (9.15)	20.18 (11.64) [c]	14.16 (9.07)
RSE	30.85 (5.38) [a]	28.55 (8.35) [d]	30.13 (4.78) [f]
BDI-II time 2		17.18 (11.64) [e]	10.68 (8.55)

Note. Values represent means (standard deviations) for each group of participants. BDI-II time 1 = Beck Depression Inventory II administered in the screening questionnaire; RSE = Rosenberg Self Esteem Scale, high scores indicate high self esteem; BDI-II time 2 = Beck Depression Inventory II administered at the time of memory experiment.

[a] n = 226

[b] current = 24.17 (7.03), past = 20.20 (2.17)

[c] current = 25.33 (13.32), past = 14.00 (10.93)

[d] current = 25.83 (9.62), past = 31.80 (5.85)

[e] current = 21.33 (12.75), past = 12.20 (8.87)

[f] n = 45

Table 3

Interrater Agreement for Each Cue Word Included in the Memory Experiment

Word	Self-referent	Other-referent
Bright	___[a]	___[a]
Delicate	.79	.79
Enormous	.88	.71
Excited	.58	.59
Failure	.82	.71
Faithful	.69	.73
Flabby	.84	.72
Hopeless	___[a]	___[a]
Joy	.81	.67
Lard	.89	.75
Lean	.90	.93
Misery	.85	.74
Peaceful	.66	.82
Rejected	___[b]	.79
Skeletal	.70	.82
Slender	.76	.68
Slim	.74	.74
Thin	.77	.71
Tragic	___[b]	___[b]
Tubby	.81	.74

Note. Values represent Cohen's kappa for each word included in the memory experiment.
[a] Dashes indicate that due to computer error memories in response to these words were not rated by the second independent rater.
[b] Dashes indicated that due to the statistical requirement for a symmetric 2-way table where the values of the first variable match the values of the second variable, Cohen's kappa statistics could not be computed.

Table 4

Proportion of Specific Memories Reported by Depressed and Never-Depressed Participants

Condition/Valence of Cue	Depressed (n = 11)	Never-depressed (n = 47)
Self-Referent		
Positive	.59 (.27)	.69 (.22)
Negative	.60 (.26)	.71 (.21)
Other-Referent		
Positive	.75 (.28)	.66 (.27)
Negative	.80 (.20)	.78 (.18)

Note. Means (standard deviations) in the table are for the proportion of specific memories defined as the number of specific memories divided by the total number of memories reported).

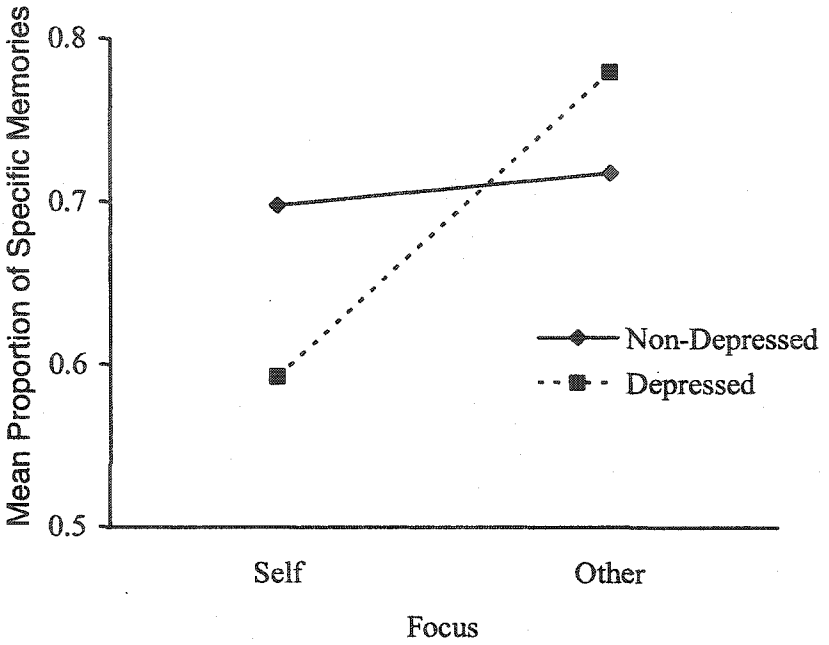

Figure 1. Proportion of specific memories in each focus condition.

Analysis revealed a main effect of focus with participants providing a smaller proportion of specific responses when instructed to recall memories about themselves ($M = .65$, $SD = .24$) compared to when they were required to recall memories about others ($M = .75$, $SD = .22$), $F(1,56) = 10.04$, $p < .01$, $\eta_p^2 = .15$. There were no significant main effects for group or valence. The main effect of focus was qualified by a significant two-way interaction with depression group, $F(1, 56) = 6.51$, $p = .01$, $\eta_p^2 = .10$. This interaction is displayed in Figure 1. The depression group by focus interaction was further investigated using a simple effects analysis. There was no significant simple effect of focus in the never-depressed group, $F(1, 56) = .48$, $p =$ *ns*. However, as expected there was a significant simple effect of focus in the depressed group. $F(1, 56) = 10.10$, $p < .01$, $\eta_p^2 = .15$. Within each focus condition, there were no significant simple effects of depression group. However, nonsignificant expected trends were apparent in the self-referent condition. In this condition the depressed group provided fewer specific memories ($M =$ .59, $SD = .18$) than the never-depressed group ($M = .70$, $SD = .19$), $F(1, 56) = 2.63$, $p =$ *ns*, $\eta_p^2 =$ .05. In the other-referent condition depressed participants actually recalled a greater proportion of specific memories ($M = .78$, $SD = .16$) than never-depressed participants ($M = .72$, $SD = .17$), however this difference was also nonsignificant, $F(1, 56) = 1.16$, $p =$ *ns*, $\eta_p^2 = .02$.

Depressive symptoms, self-esteem and memory specificity. In order to investigate the predictive power of depressive symptom severity scores and self-esteem on memory specificity in response to positive and negative cue words in self- and other-referent conditions, four separate stepwise multiple regression analyses were conducted on (a) the entire study sample ($N = 58$) and (b) then again using only the never-depressed participants ($n = 47$). The independent variables in each analysis were BDI-II time 2 scores and RSE scores. The dependent variable in each case was the proportion of specific memories in the following conditions, (a) self-referent

memories in response to positive cue words, (b) self-referent memories in response to negative cue words, (c) other-referent memories cued by positive cue words, and (d) other-referent memories cued by negative words. In all analyses, BDI-II time 2 and RSE were removed from the predictive model. Neither current depressive symptom severity nor global self-esteem predicted the proportion of specific memories recalled in the entire study sample ($N = 58$) or within the never-depressed participants ($n = 47$).

In summary, there was a nonsignificant trend for individuals with current or past depression to be less specific than never-depressed individuals in their memories for self-referent events. Additionally, the proportions of specific memories recalled by individuals with current or past depression in the other-referent condition were significantly greater than the proportions of specific memories recalled in the self-referent condition. This was not observed among never-depressed participants. Finally, neither depressive symptom severity nor global self-esteem predicted memory specificity in self- or other-referent conditions in response to positively or negatively valenced cue words.

Discussion

The purposes of the present study were to (a) replicate previous findings that autobiographical memory in individuals with past or current depression is less specific than autobiographical memory in those without depression, (b) examine the effect of focus on memory specificity in depressed individuals, and (c) investigate if depressive symptom severity can predict memory specificity in individuals who have never experienced depression.

With regard to the first purpose, in the present study participants with past or current depression showed an expected trend for reporting a smaller proportion of specific self-referent memories compared to participants who have never experienced depression. Similar to previous

findings, this tendency occurred in response to both positive and negative cue words (Brittlebank et al., 1993; Evans et al., 1992; Henderson et al., 2002; Kuyken & Brewin, 1995; Moore et al., 1988). This study also extended these findings by demonstrating a two-way interaction between depression group and memory focus. Those participants with past or current depression were significantly more specific in other-referent conditions than in the self-referent condition. There was no significant effect of focus on the proportion of specific memories reported by never-depressed individuals. These results suggest that the tendency for individuals with current or past depression to be less specific in their memories relative to never-depressed individuals is confined only to self-referent memories, and does not generalize to other-referenced memories. In other words, when individuals with a history of depression (current or past) are focused away from the self, their memory specificity in response to both positive and negative cue words is comparable to those who have never experienced an episode of clinical depression.

The present study lends support to the affect regulating hypothesis (Williams, 1996) suggested to underlie the overgeneral autobiographical memories of depressed individuals. According to this theory, when recalling events that have happened to themselves, depressed individuals are potentially confronted with memories which may generate negative affect and thus retrieve memories less specifically. Consequently, over time a more broad based network of overgeneral self-descriptors is formed, thus encouraging further overgeneral recall in a process coined "mnemonic interlock." However, as demonstrated in the present study, when a depressed individual is not activating self-referent memories, specific responses are once again recalled in proportions comparable to those who have never been clinically depressed.

These findings are consistent with the work of Conway and Pleydell-Pearce (2000) describing a model for autobiographical memory which is inherently interconnected to the

current goals of the self and, in particular, the working self which strives to reduce the discrepancy between the actual and ideal selves (Higgins, 1987). Conway and Plydell-Pearce (2000) further suggest that models used to retrieve information from the knowledge base of autobiographical memories may act to constrain access to memories in a manner which prevents potentially emotionally destabilizing information from being recalled. In restricting access to specific memories, the emotional re-experiencing of the affect of potentially painful memories can be prevented. It is interesting to consider that depressed individuals as well as those with PTSD also experience intrusive, vivid autobiographical memories (Brewin, 1998). Conway and Plydell-Pearce (2000) suggest that overgeneral memory recall may be an attempt to quickly terminate the memory search as soon as a memory related to the self can be retrieved. In the present study, when asked to recall memories about themselves, depressed participants may have engaged in a preventative style of recall which automatically terminated at the categoric level in order to avoid both confrontation of the self/ideal discrepancy and potentially painful and vivid memories. However, when instructed to recall memories of events which have happened to others, a less restrictive method of recall was required, as memories with reference to events that have happened to others neither posed a threat to the working self nor were they likely to evoke memories as potentially vivid or painful as autobiographical memories. In the present study the observation that never-depressed individuals did not differ in their proportions of specific memories for self- versus other-referent memories may be a reflection of the potentially less threatening confrontation with the working self and the self/ideal discrepancy when recalling autobiographical memory. Individuals who have never experienced depression may not need a method of memory retrieval which restricts access to potentially destabilizing information or intrusive and vivid memories experienced by depressed individuals (Brewin, 1998). Thus,

memory retrieval style for both self- and other-referent material can remain relatively similar to one another. This may help explain why formerly depressed individuals have been shown to be able to recall more specific memories following MBCT (Williams et al., 2000). MBCT emphasizes non-judgemental observations of one's experiences. In practising MBCT, formerly depressed individuals may now be able to address memories which they once avoided out of fear of confrontation with the working self and self-judgement fostered by their perceived ideal/actual self discrepancy.

The present study also found that neither depressive symptom severity nor self-esteem were predictive of memory specificity in self- or other-referenced memories in response to positive or negative cue words. These findings suggest that there may be specific features clinical depression beyond depressive symptoms and one's self-esteem which are responsible for overgeneral memory. What these features may be remains largely speculative. However, the evidence provided in the present study and those studies which have successfully reduced overgeneral memory specificity in current and formerly depressed individuals (Watkins & Teasdale, 2001; Watkins et al., 2000; Williams et al., 2000) seem to suggest that there may be something particular to the self and activation of the working-self in current or formerly clinically depressed individuals that is unique from those who are currently dysphoric as well as those who have never been clinically depressed. Research in this area could provide valuable insight and therapeutic tools for the prevention of the onset and relapse of clinical depression.

Strengths and Limitations

The present study is the first to investigate the effect of focus on the specificity of memories in those with current or past depression by experimentally manipulating the reference of the memory to be recalled. Previous research seeking to examine effects of self-focus on

memory specificity has continued to use self-referent memories as the dependent variable (Watkins & Teasdale, 2001). While these studies have provided interesting evidence for the effects of decentration, distractions, and reductions in analytical thinking in increasing memory specificity in depressed individuals, conclusions on the effect of self-focus nature of autobiographical memory on its specificity have not been possible. The present study, however, directly examined the role of focus without experimental manipulation of decentration, distraction, or analytical thinking and also achieved increased specificity in depressed participants. Thus, it appears that the self-focused nature of the autobiographical memory test does contribute to the overgeneral style of memory recall in depressed individuals.

However, while a strength of the present study is in its achievement of reduced overgeneral memory in depressed individuals without manipulation of the above mentioned variables, it is important to recognize that this study also did not measure these variables. It is possible that depressed individuals engage in, for example, analytical styles of thinking with reference to the self, but not with reference to others. Thus, the present results may mask an underlying effect of analytical thinking rather than focus. Future work in this area may find it beneficial to use a paradigm similar to the one employed in this study, with an extension to measure or manipulate levels of distraction, decentration, or analytical thinking. However, the findings presented here demonstrate that the achievement of memory specificity in depressed individuals may not need to target cognitive patterns of analytical thinking or decentraton or distraction. Instead, specificity may be achieved by encouraging depressed individuals to focus on other-referent events.

A second strength of the present study is that it is the first to examine the role of self-focus including both a depressed and a never-depressed group of participants. Previous reports

seeking to examine underlying mechanisms of the overgeneral style of autobiographical memory in depressed individuals have failed to include a never-depressed comparison group. The addition of this comparison group revealed that the effect of focus on memory specificity appears unique to those who currently or have in the past experienced major depression.

Of course, the generalizability of the present findings must also be considered. Participants in this study comprised a non-clinical sample of university undergraduates. While those in the depression group met diagnostic criteria for past or current depression as assessed by the SSPQ-X, replication of these findings in men and women comparing a clinical sample to healthy controls would allow for greater confidence in considering the unique effect of focus in depressed individuals' memory specificity. Clinical versus healthy groups should be determined through a number of methodologies such as self-report measures and clinical interviews. Additionally, future research may benefit from consideration of the effects of co-morbid disorders on the present findings, especially those such as PTSD (McNally et al., 1995), and BPD (Jones et al., 1999; Startup et al., 2001) which have shown to be associated with overgeneral memory.

Implications of the Present Findings

The ability to access depressed individuals specific memories by encouraging them to focus away from the self may provide an important tool in treatments aimed at changing dysfunctional cognitive patterns associated with depression. Admittedly, intentionally shifting focus to other-referenced memories to assist in increasing specificity does little to immediately correct dysfunctional patterns of thinking about the self. However, temporarily accessing specific information may assist depressed individuals in gradually initiating more constructive thought patterns, and serve as practise for eventually accessing specific memories related to the self.

Furthermore, accessing other-referenced specific memories may be a helpful way of overcoming, or at least temporarily addressing, some of the problems that have been associated with overgeneral memory recall. These difficulties include tendencies toward less effective interpersonal problem solving (Goddard et al., 1996) and a poorer prognosis regarding depression (Brittlebank et al., 1993).

Evan and colleagues (Evans et al., 1992) examined autobiographical memory specificity and problem solving in recently self-overdosed psychiatric inpatients and medical control patients. Problem solving was assessed using the Means-Ends Problem Solving Task (MEPS; Platt, Spivack, & Bloom, 1975), which breaks down problems solving into (a) problem recognition and defining its nature, (b) producing alternate solutions, (c) evaluating the outcomes of these potential solutions, (d) implementing the best solution, and (e) evaluating the outcome of the selected solution and making further corrections as necessary. In Evans and colleague's patients, there was a significant correlation between the effectiveness of problem-solving strategies and autobiographical memory specificity in both the collective sample of overdosed and control participants and in the overdose patients alone. Williams (1996) explains that the poor problem-solving strategy observed in those with lower levels of autobiographical memory specificity may be due to the individual inability to access specific coping strategies, which have proven useful for the person in the past. In other words, creating analogies from past situations to help individuals manoeuvre through the many steps of problem solving as outlined in the MEPS is particularly difficult for the individual who is unable to recall specific events from their past. However, the present study suggests that one possible way to over overcome this barrier could be to encourage depressed individuals with reduced memory specificity to recall how others have managed problems and generated successful solutions. In accessing specific coping strategies

employed by others, and in turn generating effective solutions for their own problems, depressed individuals may be able to cope with any number of daily situations which could lead to increased motivation and self-efficacy. This potential benefit derived from external focus on memory specificity could also extend beyond problem-solving. If indeed overgeneral memory with reference to the self serves to protect the individual from potentially negative affect, then accessing specific memories in a non-threatening manner (i.e., about others) and allowing the individual to address specific situations from a more objective perspective may prove to be an effective way of challenging and altering dysfunctional cognitive patterns and irrational beliefs held by the individual. These skills combined may prove helpful in preventing the dysphoric individual from developing clinical depression or enabling a depression prone individual to avert recurrent episodes.

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Appendix A

Beck Depression Inventory-II

BDI-II

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today.** Circle the number besides the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness	
0	I do not feel sad.
1	I feel sad much of the time.
2	I am sad all the time.
3	I am so sad or unhappy that I can't stand it.
2. Pessimism	
0	I am not discouraged about my future.
1	I feel more discouraged about my future than I used to be.
2	I do not expect things to work out for me.
3	I feel my future is hopeless and will only get worse.
3. Past Failure	
0	I do not feel like a failure.
1	I have failed more than I should have.
2	As I look back, I see a lot of failures.
3	I feel I am a total failure as a person.
4. Loss of Pleasure	
0	I get as much pleasure as I ever did from the things I enjoy.
1	I don't enjoy things as much as I used to.
2	I get very little pleasure from the things I used to enjoy.
3	I can't get any pleasure from the things I used to enjoy.
5. Guilty Feelings	
0	I don't feel particularly guilty.
1	I feel guilty over many things I have done or should have done.
2	I feel quite guilty most of the time.
3	I feel guilty all of the time.

6. Punishment Feelings	
0	I don't feel I am being punished.
1	I feel I may be punished.
2	I expect to be punished.
3	I feel I am being punished.
7. Self-Dislike	
0	I feel the same about myself as ever.
1	I have lost confidence in myself.
2	I am disappointed in myself.
3	I dislike myself.
8. Self Criticalness	
0	I don't criticize or blame myself more than usual.
1	I am more critical of myself than I used to be.
2	I criticize myself for all of my faults.
3	I blame myself for everything bad that happens.
9. Suicidal Thoughts or Wishes	
0	I don't have any thoughts of killing myself.
1	I have thoughts of killing myself, but I would not carry them out.
2	I would like to kill myself.
3	I would kill myself if I had the chance.
10. Crying	
0	I don't cry anymore than I used to.
1	I cry more than I used to.
2	I cry over every little thing.
3	I feel like crying, but I can't.
11. Agitation	
0	I am no more restless or wound up than usual.
1	I feel more restless or wound up than usual.
2	I am so restless or agitated that it's hard to stay still.
3	I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest	
0	I have not lost interest in other people.
1	I am less interested in other people or things than before.
2	I have lost most of my interest in other people or things.
3	It's hard to get interested in anything.
13. Indecisiveness	
0	I make decisions about as well as ever.
1	I find it more difficult to make decisions than usual.
2	I have much greater difficulty in making decisions than I used to.
3	I have trouble making any decisions.
14. Worthlessness	
0	I do not feel I am worthless.
1	I don't consider myself as worthwhile and useful as I used to.
2	I feel more worthless as compared to other people.
3	I feel worthless.
15. Loss of Energy	
0	I have as much energy as ever.
1	I have less energy than I used to have.
2	I don't have enough energy to do very much.
3	I don't have enough energy to do anything.
16. Changes in Sleeping Pattern	
0	I have not experienced any change in my sleeping pattern.
1a	I sleep somewhat more than usual.
1b	I sleep somewhat less than usual.
2a	I sleep a lot more than usual.
2b	I sleep a lot less than usual.
3a	I sleep most of the day.
3b	I wake up 1-2 hours early and can't get back to sleep.
17. Irritability	
0	I am no more irritable than usual.
1	I am more irritable than usual.
2	I am much more irritable than usual.
3	I am irritable all the time.

16. Changes in Sleeping Pattern	
0	I have not experienced any change in my sleeping pattern.
1a	I sleep somewhat more than usual.
1b	I sleep somewhat less than usual.
2a	I sleep a lot more than usual.
2b	I sleep a lot less than usual.
3a	I sleep most of the day.
3b	I wake up 1-2 hours early and can't get back to sleep.
17. Irritability	
0	I am no more irritable than usual.
1	I am more irritable than usual.
2	I am much more irritable than usual.
3	I am irritable all the time.
18. Changes in Appetite	
0	I have not experienced any changes in my appetite.
1a	My appetite is somewhat less than usual.
1b	My appetite is somewhat greater than usual.
2a	My appetite is much less than before.
2b	My appetite is much greater than usual.
3a	I have no appetite at all.
3b	I crave food all the time.
19. Concentration Difficulty	
0	I can concentrate as well as ever.
1	I can't concentrate as well as usual.
2	It's hard to keep my mind on anything for very long.
3	I find I can't concentrate on anything.
20. Tiredness or Fatigue	
0	I am no more tired or fatigued than usual.
1	I get more tired or fatigued more easily than usual.
2	I am too tired or fatigued to do a lot of things I used to do.
3	I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex	
0	I have not noticed any recent change in my interest in sex.
1	I am less interested in sex than I used to be.
2	I am much less interested in sex now.
3	I have lost interest in sex completely.

Appendix B

Current and Past Depressive Symptoms Screener

Please circle your answer for each question.

1.	Have you **ever** in your life had a period lasting several days or longer when most of the day you felt sad, empty or depressed?	Yes	No	Don't Know
2.	Have you **ever** had a period lasting several days or longer when most of the day you were very discouraged about how things were going in your life?	Yes	No	Don't Know
3.	Have you **ever** had a period lasting several days or longer when you lost interest in most things you usually enjoy like work, hobbies and personal relationships?	Yes	No	Don't Know
4.	During any of these periods did you experience any feelings low self-worth and changes in sleep, appetite, energy or ability to concentrate and remember?	Yes	No	Don't Know
5.	If you answered yes to any of the questions above, did at least one of these periods last for most of the day, nearly every day, for 2 weeks or longer?	Yes	No	Not Applicable
6	How old were you when these episodes started? If you are unsure, please note your best guess. If you have had more than one episode where you experienced any or all of the periods described above, please provide all ages.	_____years		

Appendix C

Rosenberg Self-Esteem Scale

RSE

Please circle the appropriate answer per item. Use the following scale:

1 = Strongly Agree; 2 = Agree; 3 = Disagree; 4 = Strongly Disagree

1	On the whole, I am satisfied with myself.	1	2	3	4
2	At times I think I am no good at all.	1	2	3	4
3	I feel that I have a number of good qualities.	1	2	3	4
4	I am able to do things as well as most other people.	1	2	3	4
5	I feel I do not have much to be proud of.	1	2	3	4
6	I certainly feel useless at times.	1	2	3	4
7	I feel that I'm a person of worth, at least on an equal plane as others.	1	2	3	4
8	I wish I could have more respect for myself.	1	2	3	4
9	All in all, I am inclined to feel that I am a failure.	1	2	3	4
10	I take a positive attitude toward myself.	1	2	3	4

Appendix D

Valence and Imagability Word List

Word List

Please rate the valence and imageability of each of the words listed below. The valence of a word describes how attractive (positive) or aversive (negative) you feel about an object or event. In the VALENCE column, if you think the word is very negative, please circle the -3. If you think the word is very positive, please circle the 3. If the word is neutral in valence to you, please circle the 0. Words that are intermediate should be rated between the two extremes.

In the IMAGEABILITY column, please rate the list of words as to the ease or difficulty with which they arouse mental images. Any words that, in your estimation arouse a mental image (i.e. a mental picture) very quickly should be given a high imagery rating of 7. If the word arouses a mental image with difficultly or not at all, it should be given a low imagery rating of 1. Words that are intermediate in ease of difficultly of imagery should be rated between the two extremes.

Please ensure you rate both the valence (left column) and imageability (right column) of each word. Feel free to use the entire range of numbers. Do not be concerned with how often you use a particular number. If you do not understand the meaning of a word please leave the row blank.

	VALENCE							IMAGEABILITY						
	Very Negative						**Very Positive**	**Low Imagery**						**High Imagery**
Hideous	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Pudgy	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Fat	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Raunchy	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Faithful	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Thin	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Bored	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Bright	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Proud	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Gorgeous	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Alluring	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Solemn	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Repulsive	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Sickening	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Fault	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Rejected	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Skeletal	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Porky	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7

	VALENCE							IMAGEABILITY						
	Very Negative						Very Positive	Low Imagery						High Imagery
Bony	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Pleasant	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Hopeful	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Tired	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Undesirable	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Amazed	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Undersized	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Guilty	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Smile	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Dull	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Gross	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Friendly	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Striking	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Grief	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Carefree	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Sexy	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Fragile	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Ugly	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Pleased	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Fleshy	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Mistake	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Lanky	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Tender	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Charming	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Large	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Eager	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Peaceful	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7

	VALENCE							IMAGEABILITY						
	Very Negative						Very Positive	Low Imagery						High Imagery
Heavy	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Enchanting	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Desirable	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Grave	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Lucky	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Failure	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Stunning	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Lovely	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Worse	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Enormous	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Helpless	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Overweight	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Narrow	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Misery	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Bad	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Flawless	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Chunky	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Weakness	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Plain	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Small	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Lard	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Hurt	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Slim	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Elegant	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Grubby	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Joy	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Stylish	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7

	Very Negative						Very Positive	Low Imagery						High Imagery
Scrawny	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Ashamed	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Glorious	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Blame	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Huge	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Pretty	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Delicate	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Imperfect	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Tiny	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Nasty	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Appealing	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Cheer	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Sad	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Devoted	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Excited	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Sunny	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Obese	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Gigantic	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Slender	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Happy	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Plump	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Underweight	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Unpleasant	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Dazzling	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Calm	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Chubby	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Unattractive	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7

	VALENCE							IMAGEABILITY						
	Very Negative						Very Positive	Low Imagery						High Imagery
Relieved	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Lively	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Lean	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Beefy	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Petite	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Flabby	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Blemished	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Upset	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Skinny	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Awful	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Glamorous	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Hopeless	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Tragic	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Toned	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Flawed	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7
Tubby	-3	-2	-1	0	1	2	3	1	2	3	4	5	6	7

Appendix E

Participant Information Letter and Consent Form (screening)

Dear Participant:

I am a Masters Student in Clinical Psychology at Lakehead University conducting a two part research study. The first part of the study is investigating personality and word valence and imageability ratings. The second part of the study is investigating mood and memory. Both parts of the study are being conducted under the supervision of Dr. Ron Davis. I would appreciate your participation in this study.

During the first part of the study you will be asked to fill out several self-report questionnaires about personality and one questionnaire asking her to rate the valence and imageability of a number of words. The questionnaires and word ratings will take approximately 40 minutes to complete. Upon completion of the questionnaire package, you will receive one Psychology 1100 bonus mark. Within a week of completing the questionnaires and word ratings you may be contacted via e-mail or telephone and asked to participate in the second part of the study conducted at Lakehead University's Psychology Department investigating mood and memory. During this part of the study you will take part in a computerized memory exercise and self-report mood measure. To further investigate previous findings relating finger length and specific personality traits, your hand will be scanned on a computer scanner for precise measurement. This second part of the study will take approximately 50 minutes and you will receive an additional Psychology 1100 bonus mark for her participation.

This research project has been approved by the Lakehead University Senate Research Ethics Board. Only Dr. Davis, two research associates, and I will have access to the information you provide. Your responses will not be identified by name and when the study is completed, the information will be securely stored at Lakehead University for seven years. A report of findings will be available to those interested upon request.

Participation in this research study is completely voluntary. If for any reason you do not want to complete the questionnaires or take part in any other part of the study, you will not be made to participate. Furthermore, you can withdraw from the study anytime without any penalty whatsoever. If you would like to take part in the first part of this study please sign the attached form.

If you would like to receive more information about the study, please contact me at 345-0778.

Thank you,

Amanda McMahan
Masters Candidate (Clinical Psychology)
Department of Psychology, Lakehead University

Consent Form

My signature below indicates that I agree to participate in this study concerning personality and word valence among university women. This study is being conducted by Amanda McMahan in the Department of Psychology for her Master's thesis under the supervision of Dr. Ron Davis (343-8646).

Signing this form indicates that I understand the following:

1. I am a volunteer and can withdraw at any time from the study without penalty.

2. There are no expected risks associated with participation.

3. The information I provide will be anonymous and confidential, and will be securely stored in the Department of Psychology at Lakehead University for seven years.

4. I may receive a summary of the project, upon request, following the completion of the study.

5. I give my permission to be contacted by e-mail and telephone to take part in a related study on mood and memory. I understand that in signing below I am not giving my consent to take part in this study, only to be contacted and invited to take part. I am aware that I may decline to take part in this second study without penalty to the bonus point I will receive through my participation in the present study. I understand that if I chose to take part in the second study I will receive an additional bonus mark.

Name of Participant (please print)	Birthdate
Signature of Participant	Date
Email Address	Telephone number
Student number for bonus mark	Name of Professor and course

IF YOU ARE 17 YEARS OF AGE OR YOUNGER THIS FORM MUST ALSO BE ACCOMPANIED WITH A SIGNED PARENT/GUARDIAN FORM (ATTACHED).

Appendix F

Parent/Guardian Information Letter and Consent Form

Dear Parent/Guardian:

I am a Masters Student in Clinical Psychology at Lakehead University conducting a two part research study. The first part of the study is investigating personality and word valence and imageability ratings. The second part of the study is investigating mood and memory. Both parts of the study are being conducted under the supervision of Dr. Ron Davis. I would like to include your daughter in the study.

During the first part of the study your daughter will be asked to fill out several self-report questionnaires about personality and one questionnaire asking her to rate the valence and imageability of a number of words. The questionnaires and word ratings will take approximately 40 minutes to complete. Upon completion of the questionnaire package, your daughter will receive one Psychology 1100 bonus mark. Within a week of completing the questionnaires and word ratings your daughter may be contacted via e-mail or telephone and asked to participate in the second part of the study conducted at Lakehead University's Psychology Department investigating mood and memory. During this part of the study your daughter will take part in a computerized memory exercise and self-report mood measure. To further investigate previous findings relating finger length and specific personality traits, your daughter's hand will be scanned on a computer scanner for precise measurement. This second part of the study will take approximately 50 minutes and your daughter will receive an additional Psychology 1100 bonus mark for her participation.

This research project has been approved by the Lakehead University Senate Research Ethics Board. Only Dr. Davis, two research associates, and I will have access to the information provided by your daughter. Your daughter's responses will not be identified by name and when the study is completed, the information will be securely stored at Lakehead University for seven years. A report of findings will be available to interested parents and students upon request.

Participation in this research study is completely voluntary. I will seek your daughter's consent. If for any reason your daughter does not want to complete the questionnaires or take part in any other part of the study, she will not be made to participate. Furthermore, she can withdraw from the study anytime without any penalty whatsoever. If you wish to give permission for your daughter to participate in both parts of the study, please sign the attached form and return it to your daughter to attach to her questionnaires packet.

If you would like to receive more information about the study, please contact me at 345-0778.

Thank you,

Amanda McMahan
Masters Candidate (Clinical Psychology)
Department of Psychology, Lakehead University

Parent/Guardian Consent Form for Participation

I give permission for my daughter to participate in this study concerning personality, word valence and imageability, mood and memory among university women. This study is being conducted by Amanda McMahan in the Department of Psychology for her Master's thesis under the supervision of Dr. Ron Davis (343-8646).

Signing this form indicates that I understand the following:

1. My daughter is a volunteer and can withdraw at any time from the study without penalty.

2. There are no expected risks associated with participation.

3. The information my daughter provides will be anonymous and confidential, and will be securely stored in the Department of Psychology at Lakehead University for seven years.

4. My daughter and I may receive a summary of the project, upon request, following the completion of the study.

5. I give permission for my daughter to be contacted by e-mail or telephone to take part in a related study on mood and memory. I also give permission for her to participate in this part of the study. I am aware that she may decline to participate without penalty to the bonus point she will receive through her participation in the present study. I understand that if she chooses to take part in the second study she will receive an additional bonus mark.

_____ _____

Daughter's name (please print) Birthdate:

_____ _____

Signature of parent or guardian Date

Appendix G

Participant Information Letter and Consent Form (Memory Experiment)

Consent Form

My signature below indicates that I agree to participate in this study concerning memory and mood among university women. This study is being conducted by Amanda McMahan in the Department of Psychology for her Master's thesis under the supervision of Dr. Ron Davis (343-8646). Participation will take approximately 50 minutes to complete.

Signing this form indicates that I understand the following:

1. I am a volunteer and can withdraw at any time from the study without penalty.
2. There are no expected risks associated with participation.
3. The information I provide will be anonymous and confidential, and will be securely stored in the Department of Psychology at Lakehead University for seven years.
4. I may receive a summary of the project, upon request, following the completion of the study.

_____	_____
Name of Participant (please print)	Birthdate
_____	_____
Signature of Participant	Date
_____	_____
Email Address	Telephone number
_____	_____
Student number for bonus mark	Name of Professor and course

Appendix H

Memory Experiment Instructions

Memory Experiment Instructions- Self-referent

I am interested in your memory for events that have happened in your life. Words are going to be presented on the computer. For each word I want you to think of an event that happened to you which the word reminds you of. The event could have happened recently (yesterday, last week) or a long time ago. It might be an important event, or trivial event.

Just one more thing: the memory you recall should be a specific event. So if I said the word "good" – it would not be OK to say, "I always enjoy a good party", because that does not mention a specific event. But it would be OK to say "I had a good time at Jane's party" (because that is a specific event). It is important to try retrieve a different memory or event for each cue word. Remember; a specific memory about an event that has happened to you, personally. Let us try some words for practice:

Awful, chunky, petite, proud

Memory Experiment Instructions- Other-referent

I am interested in your memory for events that have happened in other peoples' lives. Words are going to be presented on the computer. For each word I want you to think of an event that happened to someone else which the word reminds you of. The event could have happened recently (yesterday, last week) or a long time ago. It might be an important event, or trivial event.

Just one more thing: the memory you recall should be a specific event. So if I said the word "good" – it would not be OK to say, "My mother always enjoys a good party", because that does not mention a specific event. But it would be OK to say "My mother had a good time at Jane's party" (because that is a specific event). It is important to try retrieve a different memory or event for each cue word. Remember; a specific memory about an event that has happened to someone else. Let us try some words for practice:

Awful, chunky, petite, proud

Appendix I

Mental Health Resources Contact Information

Resources

Thank you for your participation in this research study. Should you have any concerns either now or in the future relate or unrelated to your participation in this study please feel free to contact any of the following services free of charge for psychological consultation:

1. Lakehead University Student Health and Counseling Centre (Located across from Security, near the Agora and University Centre Theatre)	343-8361
2. Thunder Bay Regional Hospital	343-7069
3. St. Joseph's Care Group	343-2425