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Self-Consistency, Cognitive Reactions and Autobiographical Memory in Depression

Hayfaa Ali Abdulsalam

A dissertation submitted to the University of Bristol in accordance with the requirements of the degree of Doctor of Philosophy in the Faculty of Social Sciences, Department of Experimental Psychology

December, 2004
Abstract

By adopting Beike & Landoll’s (2000) model of Cognitive Reaction to Memory (CRM), four studies were designed to provide a framework for investigating the role of several types of reactions that theoretically would reduce discomfort and resolve inconsistency between a remembered life event and a belief about the lifetime period in which it occurred. Specifically, the experiments investigated providing justifications for the inconsistency, recruiting additional specific events that oppose those recalled and putting the events behind oneself (closure). While Beike and Landoll’s (2000) population were university students, the main target of the current study was to examine the usage of these cognitive reactions within three levels of clinical depressed patients (mild, moderate, and severe), and the impact of that on their well-being satisfaction. Furthermore, the Autobiographical Memory Interview was administered to examine the predicted over-general style in depression across three life periods (i.e., childhood, early adulthood, recent life). Two methods were employed to generate data: a questionnaire, and interview. Questionnaire and interview data were gathered from 364 Kuwaiti depressed patients and 211-matched control. No support was found for Beike & Landoll’s (2000) prediction that cognitive reactions maintain well-being after inconsistent recall only. The findings of this study showed that the three types of cognitive reactions: justification, outweighing, and closure, were found to be ineffective in reducing discomfort and restoring consistency for depressed patients. Their negative mood state appears to affect their usage of cognitive reactions, recall of specific autobiographical memories, and beliefs about the past. Thus, their reactions to memories do not restore consistency and their well-being satisfaction remains correspondingly low. Furthermore, results indicate that the increase recall of overgeneral autobiographical memories is a process that appears to be unique to depression and early adulthood period seemed to be the point in the temporal gradient between the low (reference and mild) and high (severe and moderate) depression group.
Author’s Declaration

I declare that the work in this dissertation was carried out in accordance with the Regulations of the University of Bristol. The work is original, except where indicated by special reference in the text, and no part of the dissertation has been submitted for any other academic award. Any views expressed in the dissertation are those of the author.

Signed: [Signature]
Date: 23/12/2004
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Dedication

This thesis is dedicated, first to my father and the soul and memory of my mother, who gave me their love, faith, inspiration, and the best start in life.

To my husband, Hamad, whose without his persistence, belief, and support I would not have the opportunity to chase my ambitions.

To my lovely kids, Mohammed, Omar, and Dalal, who sacrifice their childhood to provide me with the solace and joy that made it possible for me to complete this thesis.

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Chapter 1 Literature Review

1.1 Introduction

The focus of the present thesis is the cognitive reactions to retrieving autobiographical memories in clinical depression. The thesis explores the application of the methodology of Beike and Landoll's (2000) model of cognitive Reaction to Memory (CRM) in patients with clinically defined depression. In their recent theory of Cognitive Reaction to Memory (CRM), Beike and Landoll (2000) argued that individual's striving for consistency occurs at different level. According to them, a person strives for a life story of their personal past that is consistent, in spite of occasional information to the contrary. The (CRM) theory proposes that remembered life events influence feelings of well-being based on two factors: Whether a remembered life event is consistent with beliefs about the lifetime period in which it occurred, and, if not, whether the cognitive reaction to the event memory restores consistency. In a recent demonstration of the CRM theory with university students, Beike and Landoll investigated the role of several types of reactions that theoretically would resolve inconsistency such as providing justifications (more external attribution) for the inconsistency, recruiting additional specific events that oppose those recalled and putting event behind oneself. They founds that all three cognitive reactions moderate the relationship between inconsistent recall and well-being. Particularly, cognitive reactions found to maintain well-being after inconsistent recall only. However, this model of resolving inconsistency did not examined in depression.
This thesis draws from and relates to two diverse literature areas: Research on dissonance and self-verification theories as well as the psychology of autobiography in depressed individuals. Cognitive impairments have been frequently implicated in depressive states (Weingartner & Silberman, 1982). Extensive research has found depression to be associated with biases in attention, memory, and judgment. In several studies, depressed individuals have been found either to attend more strongly to negative than positive stimuli, or to fail to show the avoidance of negative stimuli demonstrated by non-depressed persons (e.g. McCabe & Gotlib, 1993, 1995; Gilboa & Gotlib, 1997; Mogg, Bradley, Williams & Mathews, 1993). In contrast to non-depressed individuals, depressed persons have also been found to exhibit superior memory for experimentally presented negative material (e.g., Mathews & MacLeod, 1994; Matt, Vazquez, & Campbell, 1992) and to make more negative judgments concerning both hypothetical and real-life events than do non-depressed individual (e.g., Anderson, Spielman, & Bargh, 1992; Constans & Mathews, 1993). These findings support Beck’s (1976) theory that negative schemata that bias the selection, encoding, and categorization characterize clinically depressed people. The following sections below include an overview and literature review of past research related to the topics of the present thesis.

1.2 Overview of Previous Research

It is well established that those with stable beliefs about themselves and the world around them are psychologically and physically healthier than those with shifting or uncertain beliefs (Fazio & Powell, 1997; Kernis, Cornell & Sun, 1993). In studies
examining this (Fischhoff, 1982; Gilovich, 1990; Stangor & McMillan, 1992; Swann, 1990; Swann & Read, 1981a), social psychologists have realized that people seek stability and consistency. They may interrupt, remember incorrectly, deny, and avoid, or even forgot information that challenges their beliefs about themselves. In addition, a growing body of research suggests that when actions conflict with beliefs, psychological discomfort arises and motivates one to restore consistency (Croyle & Cooper, 1983; Elliot & Devine, 1994).

1.2.1 Self-Consistency Strivings

Greenwald (1980; see also Janoff-Bulman, 1992) has reviewed considerable evidence for ‘cognitive conservatism’, a disposition to preserve existing systems of knowledge and beliefs at the cost of accuracy in information processing. Greenwald argues that people tend to resist changing their attitudes and beliefs by selectively attending to and generating attitude-consistent information and by mis-remembering past experiences in order to cohere with current perceptions (see also Ross, 1989). Several theories have represented this conflict among life events and their fit with basic beliefs: cognitive dissonance theory (Festinger, 1957), self-consistency theory (Aronson, 1968, 1999), self-affirmation theory (Steele, 1988) and self-verification theory (Swann & Read, 1981a, 1981b).

In 1957, Festinger posited that a person holding two inconsistent cognitions would experience the psychological state of cognitive dissonance, which motivates efforts to reduce dissonance and achieve consonance. The theory proposes three possible
actions can be taken to restore consistency. One is to change conflicting thoughts to be consistent with each other (Festinger & Carlsmith, 1959). Another suggests explaining away inconsistent actions or bringing to mind other actions that are consistent with beliefs (Festinger, 1964). The third possibility is to aim towards trivializing the belief and action as unimportant in the belief system (Simon, Greenberg & Brehm, 1995). Any of the above three cognitive responses will reduce discomfort and gain consistency for the belief system.

One popular method of testing the theory is known as the “free-choice” paradigm (Brehm, 1956). The participants are asked to evaluate several similar items in terms of how desirable they are (i.e., music CDs). After the ratings, participants are given the opportunity to possess one of the items, but they must chose between two items that they initially rated almost equally. Because the items are similarly valued, participants apparently do not have sufficient justification for picking one items over the other. Being forced to make this choice creates dissonance because the chosen alternative invariably has some negative qualities, whereas the non-chosen alternative has some positive qualities (i.e., some bad songs, some good songs, respectively). After the choice, participants are asked to re-rate the items. Typically, they increase their rating of the chosen alternative but decrease that of the non-chosen alternative. Dissonance is measured by the absolute difference in the change of these ratings, the so-called “spread of alternatives” (Nail, Misak & Davis, 2004).
Although early dissonance research generated a substantial body of evidence supporting the theory (e.g., Aronson & Carlsmith, 1963; Festinger & Carlsmith, 1959; Gerard & Mathewson, 1966), researchers discovered that inconsistency, in and of itself, is not enough to create the cognitive/behavioural changes postulated by the theory. Numerous theorists have since proposed revisions to Festinger’s original theory of dissonance (e.g., Aronson, 1968, 1999; Brehm & Cohen, 1962; Wicklund & Brehm, 1976), and other theorists offered alternative theories (e.g., Collins & Hoyt, 1972; Cooper & Fazio, 1984; Steele, 1988; Van Overwalle & Jordens, 2002). For instance, Cooper and Fazio (1984) proposed that dissonance is evoked only when an individual feels personally responsible for bringing about an aversive event. In this tradition, Cooper and colleagues have shown that counter attitudinal behaviour leads to dissonance only when one freely and knowingly chooses to create an unwanted outcome (e.g., Cooper, 1971; Cooper & Brehm, 1971; Cooper & Worchel, 1970). Consider a prototypical research procedure in the induced compliance paradigm: A participant is asked to write an essay advocating a position with which he or she disagrees, such as reducing funding for handicapped services on his or her campus (e.g., Aronson, Blanton & Cooper, 1995). The experimenter explains that a committee that is in a position to make funding decisions will read the essay. In the dissonance motivation model, the variables necessary for dissonance arousal are the participant’s having thought about an unwanted event (such as convincing the committee to reduce funding) and the person’s accepting responsibility for being at least partly the casual agent of that consequence (Cooper, 1998).
Aronson’s (1968, 1999) self-consistency theory proposes that it is not just any two inconsistent cognitions that produce dissonance; rather, dissonance is dependent upon how the cognitions reflect upon a person’s self-concept. According to Aronson, difficult choices produce dissonance and attitude change not primarily because of cognitive inconsistency but because of how the choice reflects on the self. The spread of alternatives occurs in the free-choice paradigm because the spectre of making a bad choice is inconsistent with the positive image most people have of themselves as competent and effective at decision-making. Changing one’s ratings of the items allows one to rationalize self-relevant negative thoughts that typically accompany making a tough choice. Thus, according to Aronson (1968, 1999), the inconsistency is not a lower-order inconsistency between just any two cognitions; rather, dissonance is determined by how the inconsistency interfaces with one’s self-concept.

An alternative and competing theory of dissonance is Steele’s (1988) self-affirmation theory that proposed different definition of dissonance from Festinger’s view. According to Steele (1988), dissonance is not the aversive tension of logic-like inconsistency (Festinger, 1957), or the tension of self-inconsistency (Aronson, 1968, 1999), but rather the tension of a “threatened sense of self-integrity” (Steele, Spencer & Lynch, 1993, p. 893). The theory argue that dissonance is created when one’s global self-evaluation is threatened and that dissonance can be reduced or eliminated through actions that do not directly address the dissonance-evoking action. Steele and Liu (1983) stated, “because the disturbing thing about dissonant behaviour is its
ego threat, any self-affirming activity may reduce dissonance even when it does not resolve or dismiss the particular provoking inconsistency” (p.18). Thus, the spread of alternatives in the free-choice paradigm occurs not to reduce inconsistency, but rather to restore one’s overall sense of self.

On the other hand, self-verification theory (Swann, 1983, 1987, 1990), proposes that people strive to attain and preserve predictable, certain and familiar self-concepts by seeking and actively soliciting self-confirming interpretation responses from those in their social surroundings. In the case that the feedback is inconsistent with the view of the self, many possible responses can be applied. One of them is to confront the person providing the inconsistent feedback, and correct their mistaken impression (Swann & Ely, 1984; Swann & Hill, 1982). Another one is to ignore and forget the conflicting information (Swann & Read, 1981a). Another possibility is to avoid the source of the contradictory information (Swann, Pelham & Krull, 1989; Swann & Read, 1981a). In an impressive line of empirical work, Swann and colleagues have demonstrated that people preferentially solicit (e.g., Swann & Read, 1981a, 1981b; Swann, Wenzlaff, Krull & Pelham, 1992; Swann, Wenzlaff & Tafarodi, 1992), attend to (e.g., Swann & Read, 1981a), recall (e.g., Swann & Read, 1981a), and believe (e.g., Swann, Griffin, Predmore & Gaines, 1987) self-verifying relationships (Swann, Hixon & de la Ronde, 1992; Swann, Wenzlaff, Krull & Pelham, 1992). In short, engaging in self-verification allows people to bolster their sense of prediction and control by promoting intrapsychic and interpersonal coherence (see Swann, Stein-Seroussi & Giesler, 1992).
Since most people possess predominantly positive self-views, the desire for self-verification usually fosters a search for favourable evaluations. Unfortunately, because depressed individuals possess relatively negative self-views (Beck, 1967; Gara et al., 1993; Shustack & West, 1985), seeking confirming evaluations typically means seeking unfavourable feedback (e.g., Roth & Rehm, 1980; Swann et al., 1992).

In an extensive review of research investigating the effects of mood on the self, Sedikides (1992, p. 302) concluded that: ‘‘… mood has reliable effects on attention, memory, judgments, expectations, and behaviours regarding the self’’. In addition, Singer and Salovey (1988) summarised how the effects of mood on the recall of self-relevant material reflect a mood-congruent bias. Although some inconsistencies have been reported (Parrott & Sabini, 1990), most mood research finds that individuals experiencing a happy or sad mood tend to recall a proportionately higher number of like-valenced self-attributes a finding that can be replicated with clinically depressed individuals (Harter & Marold, 1991; Matt, Vazquez & Campbell, 1992; Salovey & Singer, 1989).

In a recent application of self-verification theory to depression, Swann and colleagues (Swann et al., 1992; Swann, Wenzlaff & Tafarodi, 1992) directly assessed feedback seeking in college students classified as depressed or dysphoric on the basis of the short form of the Beck Depression Inventory (BDI; Beck & Beck, 1972). Swann and her colleagues reported that depressed students preferred to be viewed in a relatively negative manner by their friends and dating partners and exhibited a corresponding preference for an interaction partner who had evaluated them unfavourably in a
laboratory setting. Swann, Wenzlaff, and Tafarodi (1992, study 1) showed that depressed participants preferred to interact with unfavourable evaluator even when they had the option of engaging in an unrelated task. Moreover, Swann, Wenzlaff, Krull and Pelham (1992, study 4) revealed a tension between the desire for self-verification and the desire for positivity among persons with negative self-views. Participants were first provided with either negative or positive feedback, after which their affective reactions were assessed. The investigators found that participants with negative self-views were sad and upset after initially receiving unfavourable feedback and happy and pleased after initially receiving favourable feedback. When presented with the opportunity to choose further feedback, however, participants with negative self-views solicited unfavourable feedback, despite the fact that receiving such feedback distressed them. These finding suggest that people with negative self-views in general and depressed individuals in particular may be caught in crossfire between their desire for positivity and their desire for self-verification (Joiner, Alfano & Metalsky, 1993; Shrauger, 1975; Swann et al., 1987).

Teasdale and Dent (1987) also assessed cognitive functioning in never depressed and previously depressed individuals (women) following a negative mood induction. They used a measure developed by Kuiper (1981) and his colleague to assess depressive schema and they used sad music to induce a negative mood. Following the mood induction, subjects read negative and positive trait adjectives and indicated which one described them. This was followed by a surprise free-recall task. Although previously depressed and never depressed subjects did not show the predicted
differences in number of negative adjectives rated as applicable to the self (perhaps due to a floor effect since few negative adjectives were rated as applicable to the self by participants in either group), the groups did show the predicted difference in recall of negative adjectives previously rated as applicable to the self. Twenty eight percent of previously depressed subjects recalled one or more negative self-rated adjectives, whereas only 5% of the never depressed group did.

Other more specific effects have been documented in research on mood-congruent recall. Depressed people show stronger effects for negative trait adjectives (Clark & Teasdale, 1985; Watkins, Mathews, Williams & Fuller, 1992) than for other negative words, and the negative biases in recall disappear completely when words are encoded in relation to other people rather than to the self (Bradley & Mathews 1983). Furthermore, some researchers have exposed participants to word lists that contain emotionally valenced items, and then unexpectedly assessed memory for these stimulus materials later in the same experimental session (e.g., Bradley & Mathews 1983, Teasdale & Dent 1987). When the initial encoding task has required them to relate each stimulus word to the self, depressed participants reliably display a retrieval advantage for the emotionally negative stimuli (e.g., Denny & Hunt 1992, Watkins et al., 1992). However, when instructed to encode the words in some other way, depressed individuals do not show a subsequent recall advantage for the negative items (e.g., Bradley & Mathews, 1983).
Consistent with these findings, past research has demonstrated that depressed compared to non-depressed persons are especially likely to endorse negative items as self-descriptive (e.g., Bargh & Tota, 1988; Gara et al., 1993; Pyszczynski, Holt & Greenberg, 1987). Indeed, Beck and his colleagues (Beck, Rush, Show & Emery, 1979) have argued that one of the primary features that distinguishes depressed from non-depressed people is that the former are especially likely to interpret events in ways that confirm their negative self-views. Thus, the evidence is compelling that people with negative self-concepts, including depressed people, actively seeks and often receives self-verification.

An alternative method developed by Cook and Peterson (1986) examined evidence of cognitive biases in the justifications people give for their explanations of recent real negative events. In contrast to the many studies of what causes are cited by depressed or non-depressed people for events that occur to them, Cook and Peterson asked depressed and non-depressed people why they believed that a particular factor explained an event and found results consistent with Beck’s theory (1967). Depressed people offered fewer ‘rational’ justifications for their explanations than did non-depressed people. The depressed group scored higher on ‘irrational’ justifications, which did not cite covariation of the proposed cause and the event being explained and which included the types of cognitive bias described by Beck (1967, 1987).
1.2.2 The Theory of Cognitive Reactions to Memories

Whereas both cognitive dissonance and self-verification theory posit a basic consistency striving rather than striving to think positively of the self *per se*, a recent study by Beike and Landoll (2000) demonstrated that a similar striving for consistency occurs at a different level: People strive for a life story or sense of the personal past that is consistent, in spite of occasional information to the contrary. Threats to this consistency occur when one remembers events that do not fit with one’s life story and similar consistency resolution processes are engaged. If the process of looking back over one’s life yields uncomfortable feelings, a sense sets in that all is not well. Reports of subjective well-being made after inconsistent memories are recalled will therefore reflect this distress. For instance, a woman who thinks of high school as an unhappy time in her life may recollect that she had a great time at her senior prom. This inconsistency represents a threat to the life story she holds at this time, and well-being is therefore at risk.

According to Beike and Landoll’s model, when an event memory that threatens the integrity of the life story is brought to mind, cognitions that explain away the inconsistency may be added. For example, “The only reason I had fun at the prom night is because my senses were dulled. I had taken those pain killers for my broken ankle.” This type of reaction referred to as justification. Alternatively, more cognition consistent with the lifetime period may be sought out. For example, “Sure, the prom night was fun, but I also remember losing the big softball game, getting D in Chemistry, and that my boyfriend broke up with me the day after the prom.”
type of reaction is referred to as outweighing or correcting for the inconsistent event memory. A third, acceptance-related form of reaction may also occur. For example, “The prom night is far behind me. I understand and accept it, and it just doesn’t matter today.” This type of reaction is referred to as closing the event. When such reactions occur during the process of inconsistent event recall well-being is preserved, as the life story remains unchallenged. But in the absence of such cognitive reactions, well-being suffers as a cognitive fundamental is challenged. Therefore, recall of inconsistent events leads to either appropriate cognitive reactions, or in their absence, reductions in well-being.

An important implication of the theory of cognitive reactions to memories which Beike and Landoll (2000) stated in their study is that the evaluative content of memories and/or cognitive reactions has no direct impact on well-being, as the past studies on the relationship between event memories/subjective well-being makes clear (Diener, Suh, Lucas & Smith, 1999; Headey & Wearing, 1989). Therefore, remembering pleasant events may result in either high or low well-being, but not because of the emotional content of the memory per se. Instead, the consistency of the memory’s content with the view of the lifetime period will determine well-being. Moreover, consistency with the lifetime period and not with a general view of the self is related to well-being (Swann, 1990). A specific event in high school may be inconsistent with the view of the self as a whole, but consistent with the view of the high school lifetime period. In this case, no threat to the life story exists.
In Beike and Landoll’s (2000) study, three experiments were conducted to test their model of Cognitive Reactions to Memory (CRM), in which participants recalled life events of a particular evaluative content (pleasant or unpleasant), then reported their cognitive reactions to those memories, followed by a report of subjective well-being. In addition, a measure of evaluative tone of the associated lifetime period was given to determine the consistency of the recalled events within that particular lifetime period. The results of the three experiments support the predictions of their model. The first two experiments demonstrated that when appropriate cognitive reactions occurred after recalling specific life events this was associated with improved well-being. The cognitive reactions measured justification, outweighing, and closure of the event were linked with higher well-being if they occurred after inconsistent recall, but not if they occurred after consistent recall. The third experiment revealed that higher well-being did not lead to appropriate cognitive reactions. Instead, appropriate cognitive reactions appear to protect well-being from consistency threats. In addition, as predicted by their theory, the positivity of the recalled events had no direct effect on well-being. Taken together, these results provided strong support for their CRM model.

1.2.3 Theories of Depression

1.2.3a What is Depression?

Depression is an extremely devastating disorder, having severe social and physical consequences, a source of distress and dysfunction for individuals and significant costs for families, communities and society (Klerman & Weissman, 1992). A recent
A study by Harvard University and the World Health Organization found that of all worldwide illnesses, depression is the fourth leading cause of burden, physical, emotional, social, and economic problems (Murray & Lopez, 1996). Age of onset of depression is becoming increasingly younger and that the risk of developing depression has increased from 15 to 20% in the 1920s to 40-60% in cohorts born in the 1960s (Gershon, 1991). Thus, depression occurs in children, adolescents, adult, and the elderly. There are numerous evidence shows that depression is a chronic condition with episodic relapses and recurrences, often increasing in frequency, duration and severity (Kupfer, 1991). Research has described the seriousness of the impact of depression and its recurrence on functional ability, interpersonal relationships, occupational adjustment, social roles, and personal cognition and behaviour (Klerman & Weissman, 1992). It manifests as a combination of feelings of sadness, loneliness, irritability, worthlessness, hopelessness, agitation, and guilt, accompanied by an array of physical symptoms. A common symptom of depression is social withdrawal (American Psychiatric Association, 1994; Davison & Neale, 1994) and major depression accounts for up to one third of people who commit suicide (Davison & Neale, 1994). As depression becomes more severe, patients may feel helpless and worthless and think their situation is hopeless. Thoughts of suicide are common. Depressed people also frequently complain of poor concentration, poor memory, and difficulty making decisions. Anxiety, a sense that something unspecified but dreadful may happen, is often present. Depression can be a symptom (as when a person says, “I feel depressed”), a sign (when someone observes, “he seems depressed”), or a diagnosable disorder. In recent years, increasing attention is
given to chronic forms of depressive disorder. One recent community study reported a lifetime prevalence rate of 6.2% for chronic major depression (Swartz, Kessler, McGonagle & Blazer, 1995). Compared to episodic major depressives, chronic depressives tend to have poorer social adjustment and impaired overall functioning, and utilize health care services more frequently (Friedman, 1995; Leader & Klein, 1996; Wells, Burnam, Rogers, Hays & Camp, 1992).

### 1.2.3b Depression Screening Measures

Selection of a screening measure is the first and most important step in the process of managing depression. Considerations for selecting a measure include characteristics of the population to be screened, psychometric properties of the instrument, time required to complete the measure, time required to score the measure, ease of use, and cost of obtaining the measure. It is important to notice that Depression Screening Measures do not diagnose depression, but they provide an indication of the severity of symptoms and assess the severity within a given period of time (e.g., the past seven to 14 days). Although each measure has a unique scoring system, higher scores consistently reflect more severe symptoms. All measures have a statistically predetermined cut-off score at which depression symptoms are considered significant. Some measures group scores into different levels of symptom severity.

It is recommended that people scoring above the established cut-off level should be interviewed to assess for the depression disorders criteria found in the Diagnostic and Statistical Manual of Mental Disorders (1994, DSM-IV-TR). These include major
depressive disorder, subclinical or minor depression, and dysthymia. An interview is necessary because many conditions have symptoms that are common to depression. In addition, screening measures do not address important diagnostic features such as duration of symptoms, degree of impairment, and co-morbid psychiatric disorders. Furthermore, clinical judgment should supersede strict adherence to DSM-IV-TR criteria because the clinical manifestations of depression may vary by age, gender, or cultural background.

The most widely used diagnostic tool by mental health professionals is the American Psychiatric Association’s diagnostic and Statistical Manual, presently in its fourth edition (DSM IV, APA, 1994). The DSM IV diagnostic criteria for major depression are shown in Appendix (1). It is important to note that the only essential criterion for diagnosing major depression is a decrease in positive mood or an increase in negative mood. Other symptoms shown in Appendix (1) must also be present, except none are in themselves necessary. Accordingly, a diagnosis of major depression is ultimately based on changes in an individual’s mood: mood is the deciding factor. Thus, it is important to separate depressive disorders from everyday “blues” or sadness.

There are different theoretical perspectives concerning the origins of depression. Psychoanalytic views focused on maladaptive transition through the psychosexual stages of development (Freud, 1950). Behavioural accounts focused on the secondary gains from the depressed status. This approach stems from interpersonal theory and proposes that the behaviours of depressed individuals create a social
environment which itself maintain depressive episodes. For example, depressive symptomatologies are seen to be reinforced by the increased attention and sympathy from others (Lewinsohn & George, 1969). Physiological accounts have focused on neuro-chemical correlates of depression (see Clark & Teasdale, 1982) and social accounts have tried to explain depression in terms of preceding negative experiences (see Brown & Harris, 1978). Another perspective, which has emerged and stimulated by recent empirical studies rather than a theory, focuses on the effect of childhood adversity and early home environment on enduring depression (Rosenthal, Akiskal, Scott-Strauss, Rosenthal & David, 1981). However, one of the most influential approaches in recent years has been to focus on cognitive vulnerability to depression (Beck, 1976; Beck et al., 1979; Beck, Ward, Mendelson, Mock & Erbaugh, 1961; Ellis, 1970; Kovacs & Beck, 1978; Miranda & Gross, 1997, Miranda & Persons, 1988; Miranda, Persons & Byers, 1990; Persons & Miranda, 1992; Teasdale, 1983, 1985, 1988; Teasdale & Dent, 1987). This cognitive approach posits that a vicious cycle is established between depressive symptoms and the individual’s perception and response to these symptoms.

The present study will review and focus on three major perspectives from the psychological literature on psychosocial processes and mechanisms underlying persistence in depression. The three perspectives that covered below are: the cognitive perspective, the interpersonal perspective, and the early childhood environment.
1.2.3c The Cognitive Perspective

Recently, cognitive theories of depression have been most dominant in guiding research. Beck (1976; Beck et al., 1979; Kovacs & Beck, 1978) has arguably been the most influential figure in this field, being one of the first to formulate a cognitive theory of depression. Beck suggested that cognitive processes play an important casual role in depression. He argued that possessing a negative thinking style conferred a vulnerability to depression. Someone who possessed a negative thinking style would tend to think negatively about themselves, the world and their future. According to Beck (1967, 1987; Beck et al., 1979) negative self-schemata revolving around themes of inadequacy, failure, loss and worthlessness are hypothesized to provide cognitive vulnerability to depressive symptoms. Such negative self-schemata often are represented as a set of dysfunctional attitudes or self-worth contingencies such as “I am nothing if a person I love doesn’t love me”. When people encounter negative life events that impose on their cognitive vulnerability, individuals exhibiting such dysfunctional attitudes are hypothesized to develop negatively biased explanation of the self (low-self-esteem), world and future (hopelessness) and, in turn, depressive symptoms. Beck suggested a number of categories of negative thinking, for example, overgeneralization that involves extending the implications of one negative event to a wide variety of events so that, for example, following a relationship break-up an individual would decide that all their relationships and friendships were doomed to failure. Possessing such a negative thinking style would make a bad situation worse by increasing the negative impact of an event to its most extreme.
Empirical support for Beck’s theory involved showing a significant association between current depression and a negative thinking style (Beck et al., 1979; Haaga, Ernst & Dyke 1991). However, although such correlational evidence does not preclude the casual effect of negative thinking on depression there are other explanations of these findings. In particular, it is possible that the casual direction is reversed with the negative mood characteristic of depression causing changes in thinking patterns. Indeed, Bower’s (1981) mood-congruent hypothesis postulates that cognitions will be influenced by an individual’s current mood. Thus, it may well be that the negative thinking style associated with depression are a consequence, rather than a cause, of the disorder. If Beck’s theory is correct then we should find negative thinking precedes the onset of depression and remains after the depression has remitted. However, despite numerous studies researchers have generally failed to find evidence for negative thinking patterns in adults at risk for depression who are not currently depressed (Hamilton & Abramson, 1983; Silverman, Silverman & Eardley, 1984; Simons, Garfield & Murphy, 1984). Thus, at this point Beck’s theory postulating cognitive vulnerability for depression appears incorrect.

However, researchers such as Teasdale (1983, 1985, 1988), Ingram (1984b) and Miranda & Persons (1988; Miranda, Persons & Byers, 1990; Persons & Miranda, 1992; Miranda & Gross, 1997) modified Beck’s theory in a way that maintained the casual role for negative thinking. They suggested that rather than negative thinking being a permanent characteristic of people at risk of depression, a tendency to think
negatively is only apparent following an initial, temporary negative mood. In other words, it is possible to distinguish individuals at risk for depression from individuals who are not at risk for depression by looking at their cognitive responses to a temporary negative mood – the Differential Activation Hypothesis (DAH, Teasdale, 1983, 1988).

Teasdale’s differential activation hypothesis (1983, 1988) elaborates upon semantic network theory, which has been used to explain the effects of state dependence and mood congruence on memory (Blaney, 1986; Bower, 1981). According to semantic network theory, when some outside event saddens a person, negative memories are activated. Spreading activation to similar negative memories brings other sad memories to consciousness, which then serve to maintain the negative emotion, and enhance further retrieval of unpleasant memories in a cycle fashion (Bower, 1981). The differential activation hypothesis posits that a vicious cycle between negative memories, sad emotion, and negativistic interpretations of new events creates a persistent depressive cognition.

Teasdale and Dent (1987) assessed this hypothesis by studying women with and without a history of depression, who were not currently depressed. Initially, there were no differences between the two groups in their negative thinking styles, questioning Beck’s theory. However, following an experimentally induced negative mood the women with a history of depression endorsed significantly more negative self-statements than women without a history of depression. This tendency to think
negatively when a person is in a negative mood is thought to maintain and prolong the negative mood, eventually resulting in a diagnosis of clinical depression (Teasdale, 1988). And depression duration may increase as individuals become “depressed about their depression” (Teasdale, 1985). Since this study many other researchers have provided similar evidence for the Differential Activation Hypothesis (DAH) (Miranda & Persons, 1988; Miranda, Persons & Byers, 1990; Persons & Miranda, 1992). Thus, it is how an individual cognitively responds to a temporary negative mood that determines whether or not they become depressed. Several early studies by Teasdale and colleagues found that negatively valenced memories were more easily retrieved when a negative mood was experimentally induced (Teasdale & Fogarty, 1979; Teasdale, Taylor & Fogarty, 1980). Further studies point out that interrupting negative thoughts reduced endogenous or state depression (Fennell & Teasdale, 1984; Fennell, Teasdale, Jones & Damle, 1987; Teasdale & Rezin, 1979a, 1979b), providing support for the connection between negative thoughts and depression persistence. In later studies, Carr, Teasdale and Broadbent (1991) have found a reciprocally reinforcing relationship between depressed mood and negative self focus, and a significant association between negative self-description and 5-month course of depression has found by Dent and Teasdale (1988).

More recently, Teasdale has argued that depressed mood may not only increase accessibility of specific negative constructs, but may actually change the interrelationships between mental constructs. Teasdale proposes that the interacting cognitive subsystem (ICS) will help us to understand the interaction between
cognition and affect in the persistence of depression (Teasdale & Barnard, 1993). Each subsystem provides input to other subsystems, and together all the subsystems interact to synthesize schematic models, which in turn produce particular emotions and bodily effects. Even though Teasdale's theory is a well-dressed combination of memory and more recent ideas concerning depression persistence, a limited number of studies has directly tested the theory. In many of the earlier studies, depression was induced in the laboratory (e.g., Teasdale & Fogarty, 1979; Teasdale et al., 1980), which makes it difficult to draw conclusions regarding the relevance of this work to clinical depression. In addition, in contradiction to Teasdale's notion that depressed mood necessarily triggers a vicious cycle of negative cognitions and depression, evidence shows that individuals can and do recover from intense negative mood states (Blaney, 1986), and are not always caught up in a vicious depressive cycle. Furthermore, Kuiper and Higgins (1985) found that even though it is possible that persistent depressives as a group are more likely to have negative early memories that would be easily accessed when an individual is in a depressed mood, not all individuals with negative early memories are vulnerable to negative memory biases.

Nolen-Hoeksema's (1987, 1991) response style theory of the persistence of depression is similar to Teasdale's ideas, as Teasdale has noted (Teasdale, 1988). Her theory states that a person's response to their depressed mood will influence the duration of these moods. In particular, rumination in response to depressed mood should increase the likelihood, severity and duration of syndromal depression (e.g., Just & Alloy, 1997; Kuehner & Weber, 1999; Nolen-Hoeksema, 2000). Nolen-
Hoeksema defines rumination as emotion-focused behaviour or thoughts that centre attention on mood and depressive symptoms and the causes or consequences of depression. She hypothesises that individuals who ruminate in response to depressed mood will be more likely to maintain that depressed mood than those who distract themselves from their problem (Nolen-Hoeksema, 1987, 1991). In support of her theory, research indicates that rumination is associated with extended periods of depressed mood. Individuals who have been depressed for two-weeks or longer are more prone to ruminate than those who experience briefer depressive episodes (Roberts, Gilboa & Gotlib, 1998), suggesting that rumination is associated with persistent depression. In addition, in a naturalistic study of loss, women who utilized rumination to cope with their grief had higher depression levels at a six-month follow-up (Nolen-Hoeksema, Parker & Larson, 1994). The adverse effects of ruminative self-focus can be reduced if depressed individuals shift their attention from self-related information to non-self-related information by engaging in distracting tasks (Nolen-Hoeksema, 1991). In fact, both Morrow and Nolen-Hoeksema (1990) and Nolen-Hoeksema and Morrow (1991) found that participants who distracted themselves from their depressed mood and engaged in an active task showed the greatest recovery from lab-induced depressive affect and individuals who were ruminative and passive showed the least remediation of depression. An alternative to distraction would be to refocus attention on the self, using forms of self-focus that are not ruminative, and that do not share the deleterious effects of rumination (Watkins & Teasdale, 2004). This possibility is supported by evidence that rumination is only one of a number of possible modes of self-focus, each of
which has distinct functional properties (McFarland & Buehler, 1998; Trapnell & Campbell, 1999; Watkins & Teasdale, 2001).

Ruminators are found to have poor problem solving skills (Lyubormirsky & Nolen-Hoeksema, 1995) and this is an additional way in which rumination may lengthen depression. The act of focusing on current aspects of one’s depression may impede long-term thinking and planning, and discourage positive problem-solving strategies. Ruminators create half as many solutions to problem than those who distract themselves from their depression (Morrow, 1990), and when ruminators do attempt problem solving, they are more likely to engage in reckless or maladaptive behaviours (Nolen-Hoeksema & Morrow, 1991). It is possible that rumination’s negative effect on self-esteem and motivation to improve one’s situation (Nolen-Hoeksema, 1991) impacts on problem solving behaviour. On the other hand, lack of problem solving may not give ruminators the positive reinforcement that would naturally occur upon improving a negative situation, nor expose them to different, possibly more positive situations, or provide a sense of efficacy and control (Lara & Klein, 1999).

1.2.3d The interpersonal Perspective

This approach suggested that negative social interactions are responsible for persistence of depression. Some research indicates that lack of social support in the environment may increase the possibility of persistence in depression (George, Blazer, Hughes & Flower, 1989; Goering, Lancee & Freeman, 1992). Lewinsohn’s
(1974) theory expands the work of Skinner (1953) and Costello (1972), who both hypothesize that depression results from lack of positive support in the environment. Lewinsohn proposed that (a) there is a causal relationship between lack of positive reinforcement and dysphoria, (b) depressive behaviours are preserved and encouraged by the environment through such certain behaviour as interest and concern, and (c) lacking social skills often lead the decrease in positive environmental reinforcement (Lewinsohn, 1974; Lewinsohn & Shaw, 1969; Lewinsohn, Youngren & Grosscup, 1979). Lewinsohn in addition suggested that, even though depressive behaviour may elicit short-term support from others, over the longer term it becomes aversive, leading others to withdraw and decreasing the level of positive reinforcement. Congruent with certain aspects of Lowinsohn’s (1974) theory, a number of studies found that depressives are less socially skilful than non-depressed controls (Gotlib, 1982; Youngren & Lewinsohn, 1980), show significantly fewer interpersonal behaviours to others and experience lower rates of positive reinforcement and higher rates of aversive experiences (Lewinsohn, Sullivan & Grosscup, 1980). Furthermore, Lewinsohn, Lobitz and Wilson (1973) found that depression was allied with a decline in the capacity to enjoy positive events and an increase in the sensitivity to negative events.

Nevertheless, several longitudinal studies have not found evidence for the prediction that a decrease in pleasant activities temporally lead to an increase in depressive symptoms (Lewinsohn & Graf, 1973; Lewinsohn & Libet, 1972). Also, there is proof that poor social skills may be linked with psychopathology in general, rather than
depression exclusively. For instance, Gotlib (1982) found that depressed patients were objectively less socially skilful than non-depressed hospital employees, and their level of social skill was not significantly different from that of non-depressed inpatients. Coyne (1976) proposed a theory of the depressive cycle that is similar to Lewinsohn’s theory, yet, it focuses more on the negative influence of depression on the depressed person’s family and friend over time. Coyne (1976) suggests that depressive’s constant demand for sympathy and concern from the social environment over time becomes distressing to friends and family, and make interactions both unpleasant and undesirable. The depressive notes that the support he gains from others is increasingly less authentic and interprets the social environment as more hostile. Accordingly, the depressive might become more dependent and helpless, in an effort to get some true support and attention. Thus, Coyne’s theory proposes that consistent negative feedback from the environment hinders recovery from depression.

More direct examinations of Coyne’s theory have found that depressed individuals also distress and annoy their friends and family, thus creating a negative environment for themselves. For example, Coyne et al. (1987) found that living with a depressed patient was associated with negative mood, annoyance, and rejection in family members.

In addition, Biglan et al. (1985) found similar negative interactions between wives diagnosed with depression and their spouses. These couples demonstrated considerably less disclosure to each other, and displayed less facilitative behaviour than did normal couples. Several studies also indicate that living with a depressed
college student can be quite aversive. For example, over a 9-month period, Hokanson and his colleagues (1989) found roommates of identified depressed college students to be more aggressive towards their depressed roommates, and to enjoy contact with them less, compared to roommates of non-depressed students. Similarly, Burchill and Stiles (1988) found that psychometrically diagnosed depressed students were significantly more rejected by their non-depressed roommates than were non-depressed participants. Joiner, Alfano and Metalsky (1992) found that mildly depressed male students were rejected by their roommates if the student strongly sought support from the roommate.

Although the Coyne’s theory of how negative interpersonal behaviour affects depression persistence is appealing, some studies contradict portions of his theory. For instance, while the evidence indicates that participants may reject depressed persons, it has been hard to find consistent evidence of negative mood induction in participant that interact with depressed confederates (Gotlib & Robinson, 1982; Howes & Hokanson, 1979), strangers (Gotlib & Meltzer, 1987; King & Heller, 1984; McNiel, Arkowitz & Pritchard, 1987), and confidants (Belsher & Costello, 1991; Burchill & Stiles, 1988; Joiner et al., 1992; Siegel & Alloy, 1990). Surprisingly, Burchill and Stiles (1988) found that the moods of both normal individuals and their depressed roommates actually improved significantly over the course of the lab-induced interaction, which is directly contrary to what Coyne would predict. Furthermore, Joiner and his colleagues (1992) found that negative mood induction in roommates could not be explained by the depressed person’s aversive behaviour.
These findings are problematic for Coyne’s theory, which suggests that negative mood induction in the non-depressed member of the dyad is an essential basis for later rejection of the depressed individual.

1.2.3e Early Home Environment

Adverse childhood environments have been reported to be common in at least a subgroup of chronic depressives (Rosenthal et al., 1981). A number of studies have suggested that poorer quality of parenting is associated with more chronic forms of depression. For example, in several studies, Parker (1983; Parker, Kiloh & Hayward, 1987) has reported that low parental care and high parental overprotection are more common in individuals with neurotic depression, a conceptual precursor of the current category of dysthymia (Klein, Riso & Anderson, 1993). In addition, early onset dysthymics are found to have experienced poorer parenting in childhood than non-chronic major depressives and normal individuals, and experienced greater physical and sexual abuse than normal individuals (Lizardi et al., 1995).

Furthermore, Brown and colleagues found that childhood adversity predicted failure to recover from a major depressive episode in 12-month follow-ups of both a clinical (Brown & Moran, 1994) and community (Brown, Harris, Hepworth & Robinson, 1994) sample. In another study with, Andrews and colleagues (Andrews, 1995; Andrews, Valentine & Valentine, 1995) found that, among depressed women, those who had experienced physical or sexual abused in childhood were approximately twice as likely to have persistent (> 1 year) or recurrent depression as those who had not been abused. Finally, in a 1-year follow-up, a history of physical or sexual abuse
in childhood found to be linked with a lower likelihood or recovering from major depression (Zlotnick, Ryan, Miller & Keitner, 1995).

After reviewing these three major theoretical perspectives on the persistence of depression, it is worthwhile to consider how they may be interrelated. Recent finding by Kuyken and Brewin (1995) suggest that, during a depressive episode, those individuals who experienced physical or sexual abuse find it predominantly hard to avoid intrusion memories, which hypothetically would interfere with their ability to distract, and might encourage rumination regarding past experiences, consequently, prolonging depression (Nolen-Hoeksema, 1987, 1991). The patterns of negative thoughts, may then be an effect of childhood adversity, and hence mediate the relationship between childhood and persistence of depression. Another explanation has been suggested by Rose and Abramson (1992), who proposed that frequent exposure to negative life events early in life prevents the development of a range of hopeful cognitions that might help recovery from depression.

Interpersonal factors might also mediate the relationship between childhood adversity and persistent depression. For example, Brown et al. (1994) in his study with a clinical sample, has found that interpersonal difficulties mediate the association between childhood adversity and chronic depression. It is possible that childhood abuse or neglect might interfere with the attainment of interpersonal skills, leading to fewer positive relationships, less social support, and greater duration of depression (Lara & Klein, 1999). It is also possible that depressed individuals who experienced
childhood adversity actually generate interpersonal conflicts in adulthood, in an effortful attempt to create an environment with which they are familiar (Wenzlaff, Wegner & Roper, 1988). Finally, cognitive, interpersonal, and childhood adversity factors might all affect persistence of depression. For example, in depressive episodes, it is possible that negative thoughts related to memories of childhood abuse are activated (Teasdale, 1983) and this interaction between past and present strains leads to a process of rumination (Nolen-Hoeksema, 1991). This cycle of negative thoughts might make a depressed persons in demand of reassurance of their worth from others. This demand of others feedback may produce a rejection and withdrawal of support, which would leads to persistent depression (Coyne, 1976).

1.2.4 Depression and Casual Attribution Style

Casual attributions are found to play a central role in social cognition (Buchanan & Seligman, 1995). Internal (self-blaming) attributions for negative events are associated with negative emotional responses. The 'self-serving attributional bias' – the tendency to attribute positive outcomes to one's own actions, but negative outcomes to external causes – is well established (Musson & Alloy, 1988) and is generally believed to maintain a positive self-concept (Ross & Nisbett, 1991; Tennen & Harzberger, 1987). People also tend to attribute their own behaviour to situational or external causes, yet attribute the behaviour of other people to dispositional factors (Ross, Green & House, 1977). This 'fundamental attributional error' may reflect the fact that situational explanations for one's own actions are relatively accessible.
Attributional abnormalities play a causal role in psychological disorders. Proponents of the reformulated learned helplessness theory (Abramson, Seligman & Teasdale, 1978) argue that one of the key factors involved in depression is attributional style, which can be defined as how an individual tends to explain the causes of positive and negative events. The reformulated learned helplessness theory of depression argues that individuals who tend to explain negative events using internal, stable, and global factors (i.e. pessimistic individuals) are prone to depression following the occurrence of a negative event (Abramson, Metalsky & Alloy, 1989; Abramson et al., 1978; Brewin, 1986; Robins & Hayes, 1995; Sweeney, Anderson & Bailey, 1986). This pattern is generally regarded as reflecting a lack of the ‘normal’ self-serving bias. The underlying psychological process for the effect of this attributional style is the sense of helplessness (Abramson et al., 1978; Peterson & Seligman, 1984) and hopelessness (Abramson et al., 1989) associated with pessimistic explanatory styles. Research suggests that people who ascribe to pessimistic attributions tend to exhibit emotional distress following a range of events including hypothetical, experimental, and real-life events (Falsetti & Resick, 1995; Metalsky, Halberstadt & Abramson, 1987; Sweeney et al., 1986).

Research on attributional style showed that maladaptive attributional style for good or bad events was associated with poor physical health (Peterson & Seligman, 1987) and
depression (Sweeney et al., 1986), and that attributional style influences academic performance (Peterson & Barrett, 1987). Although early conceptualization of attributional style implicated the explanatory style for both bad and good events in determining health, research showed that a maladaptive explanatory style for bad events is a better predictor of health than a maladaptive explanatory style for good events (e.g., Sweeney et al., 1986). Similarly, Peterson and Sligman (1987) presented evidence that uncontrollable desirable events were less likely to produce depression than uncontrollable undesirable events. In recent research on attributional style, Peterson and colleagues have continued to place greater emphasis on attributional styles for bad events than attributional styles for good events (e.g., Atlas & Peterson, 1990; Lin & Peterson, 1990; Vanden & Peterson, 1991). In addition, Dua (1993) found that although both the negative and positive affect was correlated with psychological health and psychological problems, negative affect was a better predictor of psychological problems and psychological health than positive affect. In a study designed to investigate the comparative value of negative affect and positive affect in predicting physical health, Dua (1993) found that only negative affect predicted physical health.

1.2.5 Impaired Recall in Depression

Previous research has established that the depressed state is accompanied by changes in memory functioning (see Williams, 1996 for a review). Typically, depressed individuals find it relatively harder to recall positive memories (Dalgleish & Watts,
Negative mood promotes the recall of unpleasant events, either by making their activation easier, or by impeding retrieval of positive events.

Further research has established that depression is associated with selective processing of negative, self-relevant material. For example, several experiments have shown that depressed patients recall relatively more negative personal information than do non-depressed controls, provided that it has been encoded in relation to the self (Bradley & Mathews, 1983; Clark & Teasdale, 1982). The theoretical importance of these findings is that they are consistent with the hypothesis that depressive mood may be worsened or maintained by differential access to negative (depressogenic) information in memory (Teasdale, 1988; Teasdale & Dent, 1987).

Bower (1981) in his associative network model of mood and memory, stated that human memory can be modelled in terms of networks of concepts and schemata. The concepts and schemata are associated with descriptive propositions, which describe events. These events nodes are connected to their related schemata and descriptors by associative relations and are activated by an associated stimulus pattern, an affect, a related cognition, or some combination of the three. Within the network of associations, which constitute long-term memory, an emotion such as depression will be connected to the many event nodes, schemata, and descriptive propositions, which have been previously associated with or activated by that mood. The strength of the linkage within the network will be related to the extent to which the mood, cognition clusters, and schemata, have been associated and repeatedly activated in the past.
Associative network models of the effects of mood on memory (Bower, 1981; Clark & Isen, 1982; Teasdale, 1983; Teasdale & Russell, 1983) stress the importance of individuals’ past emotional experience with particular cognitions. Pleasant words, sentences, or images are said to be only more likely to be recalled in a happy mood if they, or the concepts that they denote, have been more frequently associated with a happy mood state in the past. Similarly, unpleasant words, sentences, or images are said to be only more likely to be recalled in a depressed mood state if they or the concepts that they denote have been more frequently associated with a depressed mood state in the past. Thus, the accessibility of a memory in a given mood state will depend on the extent to which representations of the events and concepts involved in the memory have been previously activated in or associated with that mood state. For example, an individual may hold a belief but not be aware of it unless it is activated in some way. If the belief is tightly associated with a given mood state, the individual may not be able to report the belief unless the mood state to which it is linked has been activated. Hence, a negative mood state might prime the set of nodes corresponding to the statement “I am nothing if a person I love doesn’t love me” because these nodes are associatively linked to the negative mood state. Thus, Bower’s model can explain why individuals who hold dysfunctional beliefs or a negative attribution style might be unable to report this cognition unless they are experiencing a negative mood state (Persons & Miranda, 1992).

Beck (1967) used the term cognitive distortion to describe the persistent negative bias depressives show against them when making attributions. The network theory of
mood and memory is consistent with Beck’s proposals and observations. However, while Beck proposes that cognitive biases will be primarily directed against the self in depression, the associative network model assumes that constructs activated in reference to the self will be applied to social behaviour in general, that is to attributions made about others. Persons and Miranda (1992) proposed that dysfunctional beliefs and attributions are encoded in memory via mechanisms like those outlined in Bower’s (1981) associative network model of mood and memory. In this model, a person’s ideas, beliefs, memories of events, inferences, actions, and views about the self, world, and future, are encoded in an interconnected network that also includes nodes for effective states, such as sadness, guilt, anxiety, and so on. Associations connecting the concepts of the self, the person I love, the absence of life, and worthlessness, represent facts or beliefs, such as “I am nothing if a person I love doesn’t love me”. The ‘spreading activation’ part of the model proposes that when one node, idea, concept, cognition, or mood, for example, is activated, other nodes that are directly or indirectly linked by association with the activated one are activated as well.

Two studies, though, established more complex findings. Bargh and Tota’s (1988) study of automatic negative self-referential thought in depression, presented depressed and non-depressed participants with a series of adjectives of ‘depressed’ and ‘non-depressed’ content and asked participants to judge the adjectives as to their descriptiveness of the self or of the average other person. An independent norming study was done to determine whether an adjective was ‘depressed’ or ‘non-depressed’
and involved university students rating a large pool of adjectives for content-‘depressed’ or ‘non-depressed’ (see Derry & Kuiper, 1981). The memory task given consisted of participants being asked to recall as many of the adjectives as possible in a free-recall task. The findings showed that, across all participants, a greater frequency of both kinds of adjectives judged in reference to the self were recalled than adjectives judge in reference to other. This finding replicated most of the previous research findings regarding self-reference and incidental recall reviewed by Higgins and Bargh (1987). However, a striking finding was that the self-reference effect on memory was stronger for depressed subjects than for non-depressed subjects. There was a significant Depression and Referent interaction, which was the same for both ‘depressed’ content and non-depressed’ content adjectives: depressed participants evidenced more accurate memories for adjectives considered in relation to the self than did controls.

An additional finding of the study was that depression was not associated with a general cognitive impairment in the attention and alerting mechanisms of memory as was found in previous research (e.g., Breslow, Kocsis & Belkin, 1980). In a memory load condition of the study, depressed participants evidenced a smaller increase in latency of response time than controls when judging whether an adjective applied to the self for depressed content adjective. This finding did not hold for non-depressed content adjectives. There was a nearly equal increase in response latency for both depressed and control participants when they were judging depressed content
adjective as opposed to non-depressed content adjective in relation to an ‘average other’.

The authors concluded that depressed participants show automatic activation of cognitive schemas related to self-but not other because they were better than controls at remembering self-referential as opposed to other referential information. That these self-schemas were negative was supported by the fact that depressed participants were less distracted when judging depressed content information. Less distracted participants were presumably having an easier time with the task because their negative self-schemas provided them with a cognitive map, an associative network for judging depressed content related to self. Contrary to some of the predictions of the associative network model (Bower, 1981), this map helped depressed participants only when they were focusing on the self, not when they were focused on other.

Derry and Kuiper (1981) examined self-schema content among depressives, non-depressed psychiatric control patients, and normals by having participants make structural, semantic, and self-referent ratings on depressed and non-depressed content adjectives. Participants were given a recall task immediately following the rating task. For all groups, adjective recall was greatest when adjectives were judged in reference to the self. Compared to depressed participants, normal and non-depressed controls endorsed as self-descriptive significantly more non-depressed content adjectives than depressed participants. Depressives endorsed equal numbers of
depressed and non-depressed content adjectives. In scoring the recall protocols, researchers corrected for the differential numbers of yes/no ratings to make sure that these differences were not confounded with differences in recall rates. They made the correction by creating a subject-specific proportion score for yes-rated and no-rated words. Depressed group overall recall for self-descriptive adjectives was greater than both non-depressed groups. Depressives also evidenced superior recall for depressed adjectives they had endorsed as self-descriptive when compared to their recall rates for non-depressed adjectives they had endorsed as self-descriptive.

The notion that depressed individuals have a negatively elaborated, associative network which impacts their memory of self was supported by the findings of the Derry and Kuiper’s (1981) study. A finding of particular interest was that when depressed participants ‘forgot’ in the Derry and Kuiper (1981) recall task, they forgot non-depressed content adjectives (even though they had endorsed these non-depressed content adjectives as self-referential as often as they endorsed depressed adjectives as self-referential). This result suggests that memory lapses among depressives were also related to the target and semantic content of memory since depressives remembered content consistent with a depressive self-schema better than content that was not related to a depressive self-schema.

These two studies suggest that depressives may excel relative to controls on certain types of memory tasks. Consistent with the associative network memory and Beck’s (1967) theory of self-schema bias in depression, depressed participants appear to have
fairly elaborate, negatively biased self-schema which are automatically accessed by affective state and semantic referent. In general, the studies cited above support the idea that a depressed mood can influence the accessibility of memories; depression seems to make depressive autobiographical memories more accessible and pleasant autobiographical memories less accessible. Bargh and Tota (1988) and Derry and Kuiper (1981) findings are important because they suggest that depressed participants actually have more accurate memories than controls in contexts where the self is targeted, that depressed participants are not globally impaired in their attention, alerting, and mnemonic processes, and that well elaborated, negative self-schema content and cognitive structure in depressed individuals influences memory.

1.2.6 Cognitive Interference in Depression

Several investigations have examined the relation between depression and the time taken to retrieve autobiographical memories (e.g., Richards & Whittaker, 1990; Williams & Scott, 1988). In a typical experiment, subjects are presented with neutral, positive, and negative word cues, and are asked to retrieve a specific autobiographical memory. The result of these studies suggest that depressed individuals, but not normal controls, take longer to respond to positive than to negative cues, and retrieve positive memories that are less specific. Several theories have been proposed in attempt to explain cognitive interference and bias in memory functioning in depression. One body of research focuses on the effects of depression on performing traditional intellectual tasks (e.g., intellectual functioning, problem solving, speed of performing) which is considered to be neutral, neither positively nor negatively
valenced. The performance of depressives on these tasks appears to be related to the degree of effortfulness of the task and to the severity of depression, as described previously. Another body of research focuses on the effects of depression on effortful cognitive operations with valenced material (e.g., recall of negative, neutral, and positive words by depressives and non-depressives; Ingram, 1984a). These tasks seem to result in an interaction between depression status and stimulus valence such that depressives perform better than non-depressives when the stimulus material is negative rather than neutral or positive.

Several casual mechanisms have been presented for interference in effortful processing by depression: motivational deficits (e.g., McAllister, 1981; Miller, 1975; Seligman, 1975), conservative response style (i.e., depressives remember as well as normal but are less willing to report what they remember; Johnson & Magaro, 1987), reduced cognitive capacity that implies a decrease in total cognitive capacity such that depressives have fewer cognitive resources to devote to any cognitive activity (e.g., Hasher & Zacks, 1979), and narrowing of attention to focus primarily on task-irrelevant thoughts or on specifically depression-relevant thoughts (e.g., Ellis & Ashbrook, 1988).

Contemporary theories that emphasize the predominance of negative thinking in depressed individuals are consistent with this narrowing of attentional focus hypothesis. Beck (1967, 1991), for example, suggested that depression develops when negative schemata (i.e., memory structures) "pre-empt" more adaptive
schemata. Pyszczynski and Greenberg (1987) proposed that self-regulatory preservation and a self-focusing style on the part of depressed individuals might contribute to difficulty concentrating on current tasks. Rehm (1977) proposed that depressed individuals selectively monitor negative events. Lewinsohn’s model (Lewinsohn, Hoberman, Teri & Hautzinger, 1985) suggests that self-focused attention produces negative alterations in cognition. In general, as people become increasingly depressed, they engage in fewer processes requiring attention. Thus, depression appears to interfere more with effortful processes than with automatic processes (e.g., Hasher, Rose, Zacks, Sanft & Doren, 1985). Even mild depression seems to interfere with accessible effortful processes that demand a great deal of cognitive capacity. However, only in severe cases does depression appear to interfere with automatic processes (Hartlage, Alloy, Vazquez & Dykman, 1993).

In general, studies of encoding processes, including organization, clustering, and semantic encoding (Hasher & Zacks, 1979; Tyler, Hertel, McCallum & Ellis, 1979) have shown that moderately depressed patients have deficits when tasks called for the imposition of organization or structure but not when the tasks are already provided with organization or structure. Similarly, hospitalized patients who were at least moderately depressed remembered less than normal when words were unrelated (a relatively effortful task) but not when words were related (Weingartner, 1986, Experiment 1, protocol 3 and 4). Furthermore, depressed patients showed greater memory deficit for unstructured than structured material but only when word lists of medium and high levels of structure were compared. However, the opposite pattern
held true when word lists of low and medium levels of structure were compared (Watts, Dalgleish, Bourke & Healy, 1990).

1.2.7 Depression and autobiographical memory processing

Memories are transitory mental representations that only exist in the context of some specific processing episode (Anderson & Conway, 1993; Conway, 1992; Norman & Bobrow, 1979; Williams & Hollan, 1981). Some authors have argued that autobiographical memory is the database of the self and acts to constrain what the self can be at any given time and what the self is able to become in the future (Conway, 1996b; Conway & Pleydell-Pearce, 2000). Robinson (1986) proposed that autobiographical memories were a “resource” of the self that could be used to sustain or change aspects of the self. Brewer (1996, p.60) defines an individual autobiographical memory (which he calls a recollective memory) as a memory for a specific episode from an individuals’ past that typically appears to be a “relieving” of the individual’s phenomenon experience of the original event. Another definition from Swales, Williams and Wood (2001) is that “autobiographical memory refers to those memories that individuals retrieve which have personal salience for them, which are not part of generic script or semantic memory, but which form their own personal autobiography”. While according to Conway and Pleydell-Pearce (2000) autobiographical memories are transitory dynamic mental constructions generated from an underlying knowledge base within a self-memory system (SMS). The SMS contains an autobiographical knowledge base and current goals of the working self. This knowledge base, or regions of it, is minutely sensitive to cues, and patterns of
activation constantly arise and dissipate over the indexes of autobiographical memory knowledge structures.

One striking feature of autobiographical knowledge is that it contains different levels of specificity (Barsalou, 1988; Brown, Shevell & Rips, 1986; Linton, 1986; Schooler & Hermann, 1992; Treadway, McCloskey, Gordon & Cohen, 1992). In the work of Conway and his colleague (Anderson & Conway, 1993; Conway, 1990, 1992, 1996b; Conway & Bekerian, 1987; Conway & Rubin, 1993), three types of autobiographical knowledge have been identified. The most abstract and general type of knowledge that is typically measured in units of years and named distinct periods of time with identifiable beginning and ending called *lifetime periods*, such as "when I was at school", "when I was little" "when I worked at the shoe factory" and so on. Each lifetime period represents knowledge about significant others, common location, activities, plans, goals and characteristic of a period in general. It also represents thematic knowledge (common features of that period) as well as temporal knowledge (the duration of a period). Bruhn (1990) points out that people form attitudes to periods from their life (e.g., this was a time when I was doing better in my work) and this self-evaluative knowledge of a lifetime period may be represented at this level and be used in memory construction. There is also evidence that lifetime periods contain evaluative knowledge (e.g., negative and positive) of progress in goal attainment (Bieke & Landoll, 2000).
The second more specific and heterogeneous type of autobiographical knowledge is called general events. Conway and Pleydell-Pearce (2000) in their review indicate that general events, like lifetime periods, contain knowledge about locations, feelings, goals, and others. In addition, general event autobiographical knowledge (AK) can be used to access associated sensory-perceptual episodic memories as well as related lifetime periods that contains associated knowledge. In the case of the former one, a specific and detailed autobiographical memory can be formed. Barsalou (1988) found that general events encompassed both repeated events (e.g., morning rides to the college) and single events (e.g., my visit to Egypt). While Robinson (1992) pointed out that general events may themselves be organized in a variety of ways. For example, he used the term “mini-histories” for activities and personal relationship. These were structured around individual memories representing events featuring goal-attainment knowledge that carried significant information about the self (e.g., about how easily a skill was gained and about success and failure in intimate interpersonal relations) and featured highly vivid memories for critical moments of goal attainment. Furthermore, Robinson’s findings suggest a local organization within the overall class of general events such that small groups of memories that are thematically related and that refer to a relatively proscribed period of time form a distinct knowledge structure at this level in the autobiographical knowledge base (Conway & Pleydell-Pearce, 2000). McAdams, Reynolds, Lewis, Patten, and Bowman (2001) suggests that general events may be grouped by their emotional similarity and identified two groups such as redemption sequences and contamination sequences. Redemption sequences are a set of memories in which
negative experiences have an unanticipated positive outcome, while contamination sequences are sets of memories in which an initially positive experience have strongly negative outcomes. It seems from the available research that organization of autobiographical knowledge at the general events level is extensive and virtually always refers to progress in the highly self-relevant goals attainment (Conway & Pleydell-Pearce, 2000).

Event-specific knowledge (ESK) is the third and lowest level in the hierarchical knowledge structures of autobiographical memory. There are a number of studies that have emphasised the importance of this type of knowledge in autobiographical memory. In recent research, imagery has been found to be a general predictor of memory specificity (Williams, Healy & Ellis, 1999), whereas in the more specialized study of flashbulb memories (Brown & Kulik, 1977), the recall of ESK is taken as defining feature of memory vividness (Conway, Pleydell-Pearce, Whitecross & Sharpe, 2002). Johnson, Foley, Suengas and Raye (1988) found that sensory-perceptual knowledge was the key feature that distinguished memory for experienced events from memory for imagined events. Conway, Collins, Gathercole and Anderson (1996) found recall of ESK to be associated with both the correct and incorrect recognition of previously experienced events, further suggesting that ESK and the imagery to which it gives rise are critical in leading a person to believe the truth of his or her memories. In a similar vein, Brewer (1988b) observed that the more sensory detail available at recall, the more accurate an autobiographical memory was likely to be.
Therefore, according to Conway and Pleydell-Pearce’s (2000) model, autobiographical memories are emergent, transient, and dynamic constructions, which typically are not pre-stored in long-term memory, but rather generated on-line. Furthermore, they are not encoded, stored, and retrieved as a whole but rather are created by the self, based on the current goal of the self that functions as a central control processes to coordinate access to the knowledge base and modulate output from it (Conway, 1996a).

According to Williams and Hollan (1981), memories are accessed by a process of “cyclic” retrieval. A retrieval cycle commences with a cue or memory description (Norman & Bobrow, 1979) that is used to search long-term memory. Knowledge accessed by the cue is then evaluated and a decision made whether to terminate the retrieval process. When the accessed knowledge does not satisfy the constraints of the evaluation phase then a new retrieval cycle is initiated with a new memory description. This model of cyclic retrieval assumes that retrieval terminates once a memory has been located. Activating accessed knowledge during a memory search is another way in which cyclic retrieval may affect long-term knowledge (Anderson, 1983; Collins & Loftus, 1975). There, the retrieval cycle terminates once the pattern of activated knowledge satisfies constraints imposed on memory retrieval in the particular processing episode (Conway, 1996a).
In one recent study, Brewin, Christodoulides and Hutchinson (1996) specifically distinguished the incidence of intrusive thoughts (defined as spontaneous repetitive thoughts, excluding memories of specific past events) and intrusive memories (defined as autobiographical memories of a specific event or incident that happened at a particular time and at a particular place) in a non-clinical population. They found that both were common phenomena, but the former were more common than the latter. Indeed, the intrusive recollection of highly specific single details is recognized as a symptom of the clinical illness of PTSD (American Psychiatric Association, 1987). A number of studies have found, however, that many people with major depression experience intrusive memories of specific autobiographical events, similar to those characteristics of PTSD (Brewin, Phillips, Carroll & Tata, 1996; Kuyken & Brewin, 1994).

Drawing on more general information-processing theories of psychopathology (Ingram, 1984a, 1984b; Teasdale, 1988), it seems likely that the presence of intrusive autobiographical memories could also prolong episodes of depression. The presence of these memories in consciousness is likely to make other negative experience involving depressed mood more accessible and may also bias information processing to favour negative stimuli (Brewin, Reynolds & Tata, 1999). The depressed persons’ problem in retrieving specific positive memories appears to reside in them gaining access to a general level and being unable to progress beyond it. Some research has suggested that past and personal memory is organized as a hierarchy of successively more specific representations of autobiographical memory (Kolodner, 1985;
Barsalou, 1988; Conway, 1996b) – that is, rather than as a loose collection of individual episodes, the past is represented in a structured, abstracted manner. Defining a general context may be an essential stage in moving down through such a hierarchy to arrive at specific memory, and it is this search for specific instances which depressives find difficult. The result is that the cognition of depressed people is likely to be dominated by relatively abstract representations of the past rather than specific instances. This may occur for both positive and negative material but, in the case of general negative memories, subsequent retrieval of specific negative instances is relatively easy, enhancing the realism of the abstract negative representations.

Many theories of how autobiographical memories are encoded and retrieved emphasized their hierarchical aspects (Norman & Bobrow, 1979; Williams & Hollan, 1981; Reiser, Black & Abelson, 1985). According to these theories, a memory is encoded as a combination of descriptions that vary in the level of detail they contain. So if the event to be encoded involved distinctive action, then it is likely to be encoded with specific description (or tag) which will distinguish it from other same events. Instead, if nothing distinctive did occur, it will merely be encoded under the general heading. Additional problems may arise when attempting to recall events as a result of this over-general encoding. Normally, when recollecting an episode an individual first retrieves the general description or context (which gives non-specific information). These general descriptions are then used, together with other mnemonic cues available at the time of retrieved to generate increasingly specific information until the episode is retrieved. During a depressive episode or suicidal
crisis, there will be few mnemonic cues in the immediate environment to help the individual recollect events (especially positive events).

Hertel and Hardin (1990) propose that memory deficits in depression result from a lack of cognitive initiative. They suggest that depressed people perform poorly on memory tasks because of an inability to spontaneously monitor the relevance of the past. This interpretation is contrasted with resource-allocation accounts of mood state effects on memory (e.g., Ellis & Aashbrook, 1988; Hasher & zacks, 1979), whereby memory deficits are viewed as being due to a reduction deployed in some criterion task.

A number of researchers proposed theories on cognitive processing by depressed individual, particularly, on automatic (the operation takes place without requiring attention or conscious awareness) and effortful (the process requires attention and is influenced by cognitive capacity limitation) processing (LaBerge, 1973; LaBerge & Samuels, 1974; Neisser, 1967; Posner & Snyder, 1975; Schneider & Shiffrin, 1977; Shiffrin & Dumais, 1981; Shiffrin & Schneider, 1977). Hasher and Zacks (1979, 1984) argued that effortful processes were reduced under conditions of stress, including depression, because stress was thought to degrease cognitive capacity required for effortful processing. They suggest that no such reduction occurred in automatic operations. Our review of the literature indicates that depression interferes with effortful processing which is determined by the degree of effortfulness of the
task, the severity of depression, and the valence of the stimulus material to be processed.

1.2.8 Depression and the Specificity of Autobiographical Memory

Numerous studies have investigated the specificity of autobiographical memory in depressed patients by using a cued memory task (Williams & Broadbent, 1986), in which participants are given cue words (e.g., depressed, anxious or happy) and asked to produce single descriptions of memories referring to a specific time and place. Williams and Dritschel (1992) point out that while normal participants can control the specificity of their memory, certain other groups of people cannot. The phenomenon was first observed in individuals admitted to hospital following parasuicide (Williams & Broadbent, 1986). These individuals, when asked to retrieve a specific memory in response to a cue word, seemed to have particular difficulties. For example, rather than retrieving a specific memory to the cue word “happy” such as “last Friday when I was down the pub with Harry having a few beers” they tended to recall more general memories, such as “When I’m down the pub” or “When I’m with Harry” (Swales et al., 2001).

Since the time of Williams and Broadbent’s (1986) study, numerous studies have shown that difficulties in producing specific memories can be observed in a wide range of conditions including young children (Nelson, 1988), those with a past history of sexual abuse (Kuyken & Brewin, 1995), people with right-hemisphere damage (Cimino, Verfaellie, Bowers & Heilman, 1991), suicidal people (Williams &

Autobiographical memory functioning has been the focus of considerable research in the depression literature. Early research on autobiographical memory in depression concentrated on the accessibility of memories retrieved (see Williams, Watts, MacLeod & Mathews, 1997, for a review). Recently, researchers have examined, in line with the development of cognitive-behavioural therapy with its emphasis on thinking style as well as thought content (Beck et al., 1979), the retrieval style used in autobiographical memory tasks (Dalgleish, Spinks, Yiend & Kuyken, 2001). A central tenet of cognitive theories of depression is that depressed individuals exercise over-general thinking that limits their capacity to interpret events in a realistic manner (Beck et al., 1979). This position is supported by numerous studies that indicate that depressed individuals display a deficit in recalling specific personal memories (Brittlebank, Scott, Williams & Ferrier, 1993; Kuyken & Dalgleish, 1995; Williams & Dritschel, 1988). This pattern of impaired access to specific memories
has been interpreted as mediating the deficient problem solving that occurs in depressed individuals (Williams, 1996). Several authors (e.g., Shapiro, 1965; Singer, 1987; Mosak, 1958) have suggested that a more global and summarizing style of encoding, storing, and retrieving information may reflect a defensive strategy of handling painful or threatening information. Bruhn (1984) specifically has proposed that a tendency to collapse several distinct events into a generic or summarized memory may defend against specific single memories associated with unpleasant feelings (see also Singer & Moffitt, 1991). Furthermore, Williams (1996) proposed that specificity of autobiographical memory recall is related to childhood adversity, in a way that may help explain the link between childhood adversities and adult psychopathology. Williams (1996) suggested that all children tend to recall personal memories in a general way, and that specificity develops with age. However, for some children, this natural development towards specificity may be interrupted by negative experiences and that children may retain their tendency to recall general memories as a way of regulating affect associated with painful memories of traumatic events.

Williams and Dritschel (1992) assert that generic memories represent deficits in functioning of the supervisory attentional system: “if the SAS fails to operate appropriately, the goal description of the search will be inadequately specified. Consequently, insufficient discriminable and constructible cues for searching memory are generated. Commonalities in events are automatically abstracted by such a system, and will be output if there is insufficient specificity in the retrieval cue”
In a systematic series of studies, Williams (1996) established that many patients with clinically high levels of depression appear unable to generate fully detailed autobiographical memories. Instead these patients, when interviewed or cued in experimental studies, respond with what Williams called "categoric memory"—that is, they stop retrieval at a point at which they have only categories of information in mind (e.g., going to the school, walks in the park, etc). Williams suggested that the categoric search strategy for contextual (i.e., specific) information fails in depression because of a ruminative self-focus that reduces working memory capacity and encourages events to be encoded in over-inclusive, negative, self-reference descriptions. Moving from a general category to specific instances may simply require too much effort. This concept of mnemonic interlock (Williams, 1996) is consistent with recent theories of depression that centre on perpetual self-focused attention to negative feeling states (e.g., Nolen-Hoeksema & Morrow, 1993; Teasdale & Barnard, 1993). Watkins, Teasdale and Williams (2000) measured the specificity of autobiographical memory in chronically dysphoric participants before and after a rumination manipulation, in which participants focused their attention on the self, current emotions and current symptoms, or distraction manipulation, in which participants thought about externally focused items. They found that distraction produced significantly greater decreases in the proportion of over-general categorical memories than rumination. This result was further confirmed in a second study by Watkins and Teasdale (2001) and led the authors to conclude that elevated categorical memory in depression is associated with the dynamic maintenance of a ruminative mood of information processing.
Over-general thinking is central to cognitive theories of depression (e.g., Beck, 1976) and, more recently, research has indicated that this cognitive style extends to autobiographical memory retrieval (e.g., Williams & Broadbent, 1986; Williams & Dritschel, 1988, 1992; Williams & Scott, 1988). A plethora of studies has shown that in a task in which the goal is to retrieve a specific memory (i.e., a memory retrieved within its contextual features and usually referring to one particular day), depressed and Para-suicidal respondents perform poorly. Instead of specific memories, they offer general memories. For example, Evans, Williams, O’Loughlin and Howells (1992) showed that in response to the cue word “happy”, healthy individuals easily retrieve specific events (e.g. ‘the day we left to go on holiday’) whereas depressed individuals often retrieve summary memories that do not reference specific episodes (e.g. ‘when I play squash’).

Previous work proposed that the avoidance of intrusive memories is related to a more global difficulty in retrieving specific autobiographical memories to positive and negative cues (Kuyken & Brewin, 1995; Brewin, Reynolds & Tata, 1996). Following Williams and Broadbent (1986), participants were given cue words such as “clumsy” or “lonely” and were asked to retrieve a memory of an autobiographical episode that occurred at a particular time and place. Williams and Broadbent (1986) reported that, relative to the controls, the patient group found it harder to generate specific memories located in time and place. Instead, they tended to produce general memories that represented summaries across episodes or categories in their lives: for
example, to the word “happy” they might respond “I am happy when I go Jogging.”
Williams (1996) have suggested that the over-generality effect may reflect a failure
on the part of mood-disordered individuals to inhibit a categorical level of description
during the memory search process such that they then fail to successfully introduce
contextual (time and place) information into the mnemonic search. This problem of
over-general recall is frequently found in depressed and suicidal patients (Williams &
Scott, 1988; Williams, 1992).

McNally et al. (1994) introduced a technique for studying autobiographical memory
paradigm in a study of Vietnam veterans suffering from PTSD. This paradigm
involves presenting words (one at time) and asking people to identify a specific
personal memory associated with the word. The words used are generally positively
valenced, negatively valenced, or neutral. This paradigm has been used to study
memory bias associated with depressive disorders (Brittlebank et al., 1993) where it
has again been shown that depressed patients have difficulty identifying specific
personal memories in response to positively valenced cues. Rather they tend to
generate over-general memories in response to these cues. It has been suggested that
this over-general memory helps maintain depressive disorders because if patients
cannot retrieve specific positive memories or attributes of themselves, they may not
be able to alter general negative schema about themselves (Beck et al., 1979).
1.3 Overview of the present studies

On the basis of the above review, and bearing in mind the recent findings of Bieke and Landoll (2000) that effective use of appropriate cognitive reactions to deal with dissonant memories (regardless of their evaluative content) was positively related to well-being, the present series of studies were designed to investigate cognitive reactions to memories in people with clinical levels of depression. Four groups of participants: mildly, moderately, severely depressed and matched reference groups freely recalled specific life events of an evaluative content (pleasant or unpleasant), then reported their cognitive reactions to those memories, followed by evaluation of the past time period and their current level of subjective well-being (adopting a similar procedure developed by Bieke & Landoll, 2000).

The purpose of these studies was to test whether depressed people have the ability to adopt appropriate consistency-restoring cognitive reactions when they recall events that are inconsistent with a lifetime period. The three cognitive reactions measured were justification, i.e., explaining away inconsistency with an external attribution, outweighing, i.e., recruiting additional event memories consistent with the lifetime period view, and closure, which is an alternative way of dealing with inconsistent recall by being able to put it behind oneself and stop thinking about it. In the autobiographical memory system, closure allows an inconsistency to remain, but without arousing further dissonance. According to Festinger (1957), two inconsistent cognitions may be brought into consonance if one of them is explained away. A memory of an event that is inconsistent with a lifetime period view may be
discounted as being caused by something irrelevant to the self and therefore unimportant to the view of oneself. Consider this example of justification from the present study:

“I still remember the day when I got married, about nine years ago. At the same day, my brother died in a car accident on his way back from my marriage party. I hate it when people relate between my marriage and his death. I believe that it was his destiny and I have nothing to do with his death, every one of us will die some day but I really feel sad that we lost him on my wedding day”.

Justification was examined in Experiment 1, chapter 3, and Experiment 4, chapter 6. Another method for reducing inconsistency is increasing the number of consistent cognitions. An event that is inconsistent with the lifetime period view may be outweighed by recollections of other events that are consistent with the lifetime period view. Consider this example of outweighing from the present study:

“I do remember well the lovely day of my graduation from high school about 12-years ago. At that day as I went up on the stage to have my certificate I noticed that I was wearing a different pair of shoes. I was embarrassed then but I could not do anything but to pretend nothing was wrong. I can remember also that my name was put on the honour list and I got a gold medal for my great performance on the science and math subjects”.

Outweighing was examined in Experiment 2, chapter 4. In addition to justification and outweighing, the third type of cognitive reaction called closing the event,
‘closure’, was investigated in Experiment 3, chapter 5. Consider this example of closure from the present study:

“Four years ago, Three of my friends and I received a letter from our boss asking us to resign without any advance notice. I was shocked that day and tried my best to convince my boss to reverse this decision, but everything I had done went in vain. He said that new machines were brought to take our place and we should leave under all conditions. Now I am working as a manager in a well-known company with an excellent salary. Every time I remember what happened to me, I realize more and more that it was my good destiny. I never imagined getting what I have in my present work. I do not feel sorry or angry any more about leaving my previous job; it is over for me now”.

Furthermore, the specificity of the memories that depressed people retrieve was examined in Experiment 4. Major depression is characterized by a variety of change in memory performance (Watts, 1995). In particular, depressed patients’ relative inability to retrieve specific autobiographical memory, a clinically important phenomenon (Peeters, Wessel, Merckelbach & Boon-Vermeen, 2000; Williams, 1996) had been the focus of much research in the past decade. For example, depressed patients tend to respond to both negative and positive cue words (e.g., “happy”) with non-specific, overgeneral memories instead of specific recollections located in time and place. This over-general style is found to undermine a person ability to use memory in imagining the future and in solving current problems (Williams, 1996). To examine whether the over-general recall is a stable
characteristic of depressed patients, and whether this cognitive style is stable across three life periods (childhood, early adulthood, recent life), the Autobiographical Memory Interview (AMI) was administered.

This thesis is divided into seven chapters, each with its own topic. The present introduction chapter contained a literature review that addressed many topics related to the aim of the present studies such as the theories of consistency striving, theories of depression, autobiographical memory and depression. Chapter 2 covers a description of the methodology that was adopted in the present studies. Then the following four chapters cover the three types of cognitive reactions noted in the introduction. In particular, the justification reaction is examined in chapter 3, the outweighing reaction in chapter 4, and the closure reaction in chapter 5. Chapter 6 considers again the justification reaction, but varies the retrieval of pleasant and unpleasant memories using a related sample methodology. This allows the impact of inconsistent and consistent memory recall to be examined within each participant on the same measures investigated in Experiment 1. The final chapter discusses the general features of the results found and the conclusions can be drawn, the relation of these results to the literature, the implications for treatment, and the limitations of the studies. Suggestions for future work are also considered.
Chapter 2 Methodology

This chapter will provide detailed coverage of the methodology used in the thesis. The methodology used is based around that of Bieke and Landoll’s (2000) CRM model and will be used to explore how their model can be used to provide insights into the cognitions of people with depression. The model was adopted in four studies and each seeks to examine how clinical depressed patients react cognitively when they face a threat to their self-consistency, and how efficient their reactions are to resolve the inconsistency between their recalled memories and the lifetime period the memory occurred in. Each of the following sections will provide a description of the present studies methodology and techniques.

2.1 Participants

Clinical depressed patients and reference participants were recruited on the basis of opportunity rather than on any systematic selection procedure. The sample therefore represents a convenience rather than a random sample. The depressed participants were recruited from outpatients and inpatients clinics at Kuwait General Psychiatric Hospital. All the patients were diagnosed, according to the hospital’s clinical team, using the structured clinical interview for DSM-IV (SCID; First, Spitzer, Gibbon & Williams, 1995). The patients met Research Diagnostic Criteria (Spitzer, Endicott & Robins, 1978) for primary definite major depressive disorder and had no other major psychiatric diagnosis (e.g., schizophrenia, alcoholism, eating disorder, obsessive-compulsive neurosis) or major physical illness. All patients recruited were first
diagnosed with depression within the last 2 years. The matched reference group was either (a) recruited from the same hospital and were visitors or working as clinicians in the hospital or (b) they were Kuwaiti students from the Kuwait Institute of Telecommunication and the Institute of Nursing. The participants in the depressed and non-depressed group were recruited to be similar in their age and gender distribution. Educational levels were equated by ensuring that all participants had spent less than 3-years at college. Contact with the depressed patients was made through the psychiatric hospital’s Head consultant, who was responsible for arranging the appointment with each patient and who provided extensive assistance. The researcher and two psychology graduate students made the contact with the reference participants. Both depressed and reference individuals participated in the study voluntarily.

2.1.1 Ethical Issues and Consideration

The experimenter was fully aware of the importance of the ethical implications of research including the need to ensure confidentiality for research participants, as well as to provide full disclosure of the risks and benefit of the study. Following local procedures for gaining ethical approval, the chairman of the Kuwait local Psychiatric Hospital was written to with a request for permission to administer a number of questionnaires and interviews with clinical depressed patients and outpatients under their responsibility as a part of a PhD thesis. A full description of the study and its measurement instruments were also enclosed with the application. Ethical approval was subsequently gained from the Head of the local Psychiatric Hospital and the
Head of the Psychiatric Department in the hospital (see Appendix 2). Each participant in the study was provided with full description of the study’s nature and aims, and was informed that all data would remain confidential to the research team and that no participant would be identified in the final report or any subsequent publication. Each participant provided verbal informed consent before being interviewed and all informed of their right to refuse or to withdraw from the study at any time without it affecting their care and without any obligation. Only a few of the patient population refused to participate in the study.

2.2 The Overall Research Design

A cross sectional design was employed in all the studies presented in this thesis. The first phase of the research was similar to that of Bieke and Landoll (2000). This stage took place in the state of Kuwait between December 2000 and May 2001. The main aim of this first stage was to examine whether depressed patients show appropriate cognitive reactions to their inconsistent recalled memories with the time period that occurred in compared to non-depressed individuals. Thus the dependent variables were the three cognitive reactions of justification, outweighing and closure, and subjective well-being and past lifetime evaluation. The independent variables were memory recall consistency (consistent vs. inconsistent) and the depression group’s classification based on the Beck Depression Inventory (BDI) as reference (from 0 to 9), mild (10 to 16), moderate (17 to 29), and severe (30 to 63) depression group. The first phase included the first three experiments and involved the following steps:
1. The researcher discussed, translated, and evaluated with experts (see later) the instrument booklet used by Bieke and Landoll (2000). This consisted of four scales: Casual Attribution Scale, Closure Scale, Well-being Satisfaction Scale, and Past Time Attitude Scale.

2. Different types of validity test were used, including face validity, and testing the translation.

3. In the final stage, the questionnaires were administered to the study population at the Kuwait Psychiatric Hospital, the Kuwait Institute of Telecommunication, and the Kuwait Institute of Nursing (see Appendix 3 to 9).

The second phase, which took place from November 2001 to April 2002, was intended to use different recall methodology for examining a single cognitive reaction (justification) according to participants’ memories recalled consistency (consistent vs. inconsistent) and memory recall valence (pleasant vs. unpleasant). In addition, the quality and impairment of memories retrieval in depression was examined. Thus, this phase was similar to the first phase but with two more steps:

1. A different recall methodology was followed where the direct recall task was manipulated by the experimenter within the four depression groups (reference, mild, moderate, severe).

2. The Autobiographical Memory Interview was carried out with all participants individually (see Appendix 10). The interview Booklet was also translated into Arabic and validated.
All the steps, in both phases, are discussed in detail for each experiment in the next chapters.

2.3 The Instrument and Instrumentation for the Present Study

The general procedure in the whole study was as the following:

1. Obtaining an authorization for data collection and informed consent from all participants.

2. Administering the Beck Depression Inventory (Beck et al., 1961).

3. Administering the experimental booklet, similar to that used by Bieke and Landoll (2000), to probe one of three types of cognitive reactions. Justification (Experiment 1 and Experiment 4), outweighing (Experiment 2), and closure (Experiment 3) to recalled memories. This booklet consisted of five parts:

   i. Requesting recall from a specific time period and for three specific memories from that period.

   ii. Judgement of one of the three scales for cognitive reactions: Casual attribution scale (justification), closure scale, and a measure of outweighing reaction.

   iii. Completion of the five-Item “Satisfaction with Life” scale.

   iv. Completion of the “Time Attitude” scale (TAS; Nuttin & Lens, 1985).

   v. Collection of personal information (e.g., age, gender and education level) and a note of any comments or complains regarding the study.
4. Administering the Autobiographical Memory Interview. This interview was only conducted for in Study 4.

2.3.2 The Beck Depression Inventory (BDI)

The BDI (Beck et al., 1961) is a widely used 21-item self-report measure of severity of depression. It contains 21 sets of items regarding participants’ mood that they assess over the proceeding week. The psychometric properties of the BDI have been well established over the last three decades (Beck, Steer & Garbin, 1988). It has demonstrated good concurrent validity when compared with clinician ratings of college student population (Bumberry, Oliver & McClure, 1978). In the present study, the participants mood states were classified based on their BDI scores as non-depressed (BDI < 10), mild (BDI 10 – 16), moderate (BDI 17 – 29), and severe depressed (BDI 30 – 63) individuals.

2.3.3 Bieke & Landoll Experimental Booklet

After completing the Beck Depression Inventory, a similar experimental booklet of that introduced by Beike and Landoll (2000) was administered. The participants were asked to complete a five-page booklet concerning their “thoughts about events that you have experienced in your life” (see Appendix 3). The first page contained the instructions and participants were asked to work through the booklet at their own pace.
The Recall of Memories. The second page asked participants to think of a time period that they could remember well that occurred at least three years ago. This timeframe was used to ensure that the period recalled was before the onset of their depression. Participants selected one period from their life (e.g., childhood, high-school) and indicated whether this was a generally pleasant or unpleasant period one. Participants then generated a total of three memories from this period. For each memory recalled they first wrote down one or two sentences about that memory (e.g., My graduation day. I suddenly realized that my shoes were different colors) and then they were asked to write down their own evaluation for each recalled memory (pleasant vs. unpleasant). Thus, the memory recall valence in the present study was based on the participants’ own preferences to increase the likelihood they would retrieve a more meaningful event. This instruction was followed through the whole study except for in experiment 4 were a different recall methodology was used. The only restriction on the memory was that it must have lasted less than one day (i.e., seconds, minutes or hours). If the participant showed signs of struggling to find a specific time period, the experimenter provided them with some examples (e.g., their childhood, high school days, teenage period, etc.).

The calculation of memory recall valence was performed in the following manner. The number of pleasant memories recalled was calculated (maximum three). This gave a range of scores between 0 (all three memories recalled were unpleasant) through to 3 (all three memories recalled were pleasant). Memory recall valence was “pleasant” when either all three memories were pleasant or when two memories were
pleasant and one was unpleasant. Memory recall valence was “unpleasant” when all three memories recalled were “unpleasant” or when two memories were “unpleasant” and the other was “pleasant”. This is summarised in Table 2.1, where the four possible combinations of recall valence for the three memories is shown. In the final classification, the dominant form of memory recalled was used to determine the participant’s memory recall valence (i.e., the binary classification into pleasant versus unpleasant).

Table 2.1: Classification of recall valence based on the retrieval of three memories

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very sad</td>
<td>Sad</td>
<td>Happy</td>
<td>Very happy</td>
</tr>
<tr>
<td>(three sad events)</td>
<td>(two sad events)</td>
<td>(two happy events)</td>
<td>(three happy events)</td>
</tr>
</tbody>
</table>

After writing down their three memories, the participants turned to the next page (page 3) and asked to complete one of the following measures of dissonance reduction (i.e., justification, outweighing, and closure). They were allowed to refer back to the previous page if they wished.

2.3.3a Justification

The measure of justification used a casual attribution scale. Participants were asked to justify their recalled experiences (pleasant or unpleasant) by attributing each experience to either an internal or external factor. Consider one recall example from the present study from one of the reference participants:
"I cannot forget that my five year's old little daughter, who was suffering from a leukaemia, died before saying goodbye to her. On that day I was on my work when my wife called me from the hospital and told me that our daughter is in a very bad condition. I was driving my car like a crazy to get there as soon as I can but there was an accident on my way that delayed me for half an hour. When I arrived to the hospital they told me that she passed away just ten minutes ago. I went crying like a child who lost his valuable toy. I was doing my best to arrive quickly but the accident on my way delayed me. In fact, I believe that this is what our God wants and we have faith that we will see her in heaven."

Table 2.2: The internal and external justification scales

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<th>4</th>
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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Scale</td>
<td>Not at all caused by me</td>
<td>Somewhat caused by me</td>
<td>Very much caused by me</td>
<td>Entirely caused by me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External Scale</td>
<td>Not at all caused by something else</td>
<td>Somewhat caused by something else</td>
<td>Very much caused by something else</td>
<td>Entirely caused by something else</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

After recalling the event, the participant then completed two 12-point rating scales: first the scale concerning internal attribution and next the scale for external attribution. The two scales are shown in Table 2.2. On each scale the participant indicated the extent that the phrase was applicable to the memory recalled. For analysis, first this 12-point range was condensed into a 4-point scale corresponding to the four labels “Not at all”, “Somewhat”, “Very much” and “Entirely” (e.g., 1-3 = “Not at all”, etc.). Next the scores on the two scales were combined to form a single internal justification score, by reverse scoring the external attribution scale and
dividing by 2 (i.e., Internal justification score = (Internal score + (5 – External score))/2. This brings the internal justification score back to the same 4-point range.

2.3.3b Outweighing

The second cognitive reaction examined is outweighing, where participants were asked to freely list additional specific events from the same lifetime period after each directed recall task. Participants were asked to write down their own evaluation (pleasant or unpleasant) next to each event recalled. The proportion of freely listed events for the past lifetime period inconsistent with the recall valence of the original memory was used as the outweighing score. Consider this example of outweighing reaction from the present study in a non-depressed man:

Original Memory: “Four years ago on the third of September was the birth date of my first lovely child, who was a very tiny boy. I felt very sad that day because they told us before his birth that he is suffering from kidney problems and he may need an operation after his birth

Additional Memory: After two hours of his birth, while I was on the waiting room, the paediatrician came and told me that no need to worry, my son is fine and his kidneys work sufficiently. It was difficult to express my feelings at that moment. I felt I was flying over the moon.”

In this case, the period of recall was a pleasant period (birth of son), the original memory recall was an unpleasant one (son suffering from kidney problems), and the additional memory recalled was pleasant (son no longer had kidney problems). In this case, only one additional memory was recalled and therefore this participant’s
outweigh score would be 1.0 because the valence of the additional memory was inconsistent with the valence of the original memory.

2.3.3c Closure

The third type of cognitive reaction measured was closure. In popular usage this indicates being able to put the memory “behind oneself” and to “stop thinking about it”. Consider the following example of an original memory recall for a non-depressed man:

**Original Memory:** “When I was 11 years old I was playing with my little sister one day and accidentally she fall down the stairs and broke her shoulder. I remember that she accused me in that day that I pushed her down the stairs, which made my father give me a strong slap on my face that kept me crying the whole day.

**Closure Reaction:** Every time I remind my sister of this accident we just keep laughing. After all, she was just 7 years old. We really miss these old days”

Table 2.3: The 10-point closure rating scale

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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete lack of closure</td>
<td>Very little closure</td>
<td>Some of closure</td>
<td>A good deal of closure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After recalling all three memories, participants rated the degree of closure they had for each of the memories on a 10-point scale (see Table 2.3). For analysis, first this 10-point range was condensed into a 4-point scale corresponding to the four labels “Complete lack of closure”, “Very little closure”, “Some of closure” and “A good ideal of closure”. It should be noted that participants were not required to provide a
memory in order to complete the rating scale – the above example was obtained to illustrate the closure reaction. In the above example, the participant rated the closure of the memory as 9 (a great deal of closure). After completing the relevant memory recalls and ratings described above, participants turn to page 3 and completed the final two questionnaires concerned with well-being (Satisfaction With Life Scale) and their general view of their past life (Past Time Attitude Scale).

2.3.3d Well-being

According to Shin and Johnson (1978), life satisfaction is “a global assessment of a person’s quality of life according to his chosen criteria” (p.478). In the present study, subjective well-being was measured using the five-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) with each item being rated on a 7-point scale (see Table 2.4). The scale is designed around the idea that participants must be asked for an overall judgment of their life in order to measure the concept of life satisfaction. The well-being score was calculated by averaging the degree of agreement with the five (all positively worded) items of the SWLS.

Table 2.4: The rating scale used for the satisfaction with life scale (well-being)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<th>4</th>
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<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>strongly disagree</td>
<td>disagree</td>
<td>slightly disagree</td>
<td>neither agree</td>
<td>slightly agree</td>
<td>agree</td>
<td>strongly agree</td>
</tr>
</tbody>
</table>

80
2.3.3e Past Time Attitude

The view of the past life period was measured by a series of ten seven-point semantic differential items. The 10-items were taken from the Time Attitude Scale that explicitly referred to the past. The full 19-item scale has an additional 9 items that refer to the present (TAS; Nuttin & Lens, 1985). The 10-items were pleasant/unpleasant, full/empty, beautiful/horrible, cold/warm, accomplished (success)/disappointment (failure), boring/exciting, light/dark, hopeful/hopeless, difficult/easy, and important/unimportant. The view of the past lifetime period was calculated by averaging the responses on the 10-items, with reverse-worded items reversed-scored. Thus, the scale has a range of 1 (very negative) to 7 (very positive) – see Table 2.5. The TAS scores are grouped in three categories: negative (mean score below 3.50), neutral (mean score between 3.50 and 4.49), and positive (mean score of 4.50 or higher) based on the recommendations of Nuttin and Lens (1985).

Table 2.5: The rating scale used in the past time attitude scale.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very -------------------------------very negative</td>
<td>positive</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

2.3.4 The Autobiographical Memory Interview

In experiment 4, the specificity and quality of memory retrieval in depression was examined by employing the Autobiographical Memory Interview. Methods for eliciting autobiographical memory, such as the cue-word method (Crovtz &
Schiffman, 1974), often make no attempt to separate episodic and semantic autobiographical memory and are more concerned with the distribution of memories across time (Rubin & Schulkind, 1997). The Autobiographical Memory Interview (AMI) is the most commonly used clinical test of autobiographical memory (Kopelman, Wilson & Baddeley, 1989; Kopelman, Wilson & Baddeley, 1990). The AMI provides an assessment of a persons’ personal remote memory and has been developed and validated to overcome the limitations of earlier tests (Kopelman et al., 1989). It provides a framework in which to assess the intactness/impairment of a participants’ remote memory, including the pattern of any deficit and its temporal gradient. The AMI consists of a semi-structured interview schedule, encompassing two components. The first, which is called the personal semantic schedule, assesses the recall of facts relating to childhood (e.g., names of schools or teacher), early adult life (e.g., name of first employer, date and place of wedding), and more recent facts (e.g., holidays, journeys, and previous hospitalizations). Each of these subsections is scored out of 21 points.

The second section, which is called the autobiographical incident schedule, assesses the recall of specific events or incidents. The participants are required to recall three incidents from childhood, three from early adult life, and three recent events. Scoring is in terms of the descriptive richness of the account of an incident, and its specificity in time and place. Kopelman et al. (1989) provide cut-points for each scale to represent the acceptable range and three levels of abnormal scores. Thus, with the AMI, participants are constrained to produce memories from three different
time periods in their life, and a comparison can be made of their recall of facts and incidents from their past in a way that has not been possible in previous tests.

2.4 The Validity of Measurements

All the above scales and instruments were administered to participants in their own language (Arabic). Therefore, all of the instruments were validated by two processes:

1. Translation Process. Translating the Arabic version into English and retranslating to ensure that the wording of the scale was the same in Arabic. The scales used by Bieke and Landoll (2000), as well as AMI, were translated from English to Arabic and then from Arabic into English and retranslated into Arabic by another Arab translator who worked as an editor and was an experienced translator in Kuwait. The objective of this was to ensure that the items translated conveyed the correct meaning.

2. Face-validity Process. Five Arab teachers and one Kuwaiti psychiatric physician were used in this process. After translating the English scales into Arabic, the Arabic version of the scales was discussed and evaluated. The five Arabic teachers were experienced teachers who had been working in the UK between 10-15 years. They included psychology and educational teachers. The Kuwaiti psychiatric physician was completing his Master’s degree in the UK and provided guidance on the acceptability of the language used for psychiatric patients.
2.5 Data Collection

A total of 613 questionnaires were administered in the whole research. Thirty-eight of these questionnaires had missing information and were therefore not included in the relevant studies. All participants were selected voluntary on the basis of availability. Interviews with the depressed group took place in Kuwait General Psychiatric Hospital, either in the patients’ own room or in the physician office under the supervision of the Head consultant. These interviews typically lasted 45-90 minutes. For the reference group, the interviews were held after classes and were mainly conducted in the training room, and typically lasted 35-45 minutes. All interviews were carried out in Arabic and by prior appointment.

2.6 Methodological Differences from Beike and Landoll (2000)

It is important at this point to highlight two major differences in methodology between the present study and that of Beike and Landoll (2000). First, in investigating justification, Beike and Landoll’s (2000) participants were directed explicitly to recall one event (pleasant or unpleasant) from two lifetime periods: one from the recent past and one from the more distant past. The time frame for these two recall periods is not specified. In the present study, participants were asked to freely recall three events from one specific time period (selected by them, but at least three years ago) and to provide their own evaluation of that time period (pleasant or unpleasant) and for each of the memories they recalled (pleasant vs. unpleasant). Second, in investigating the outweighing reaction, Bieke and Landoll (2000) asked
two judges to rate the memory freely recalled as either positive or negative in evaluative content. In the present study, the participants also freely listed events after each recall task, but the participants provided their own evaluation of the valence of these items.

2.7 Summary

This chapter has outlined the purpose, method and goals of the research, describing the development of the instruments and scales used to investigate the ability of depressed people to engage in several types of cognitive reactions which are believed to resolve inconsistency between a remembered life event and the lifetime period in which it occurred. The general data collection steps were also described. In the following chapters, each experiment will be reported individually in more detail.
Chapter 3 Depression and the Mediating Role of Justification

3.1 Introduction

According to Festinger (1957) cognitive dissonance exists when two or more cognitive elements (e.g., an attitude and knowledge of one’s behaviour) are experienced as logically inconsistent. This inconsistency is predicted to produce discomfort or tension that the individual is motivated to reduce. Self-verification theory (Swann, 1983, 1987, 1990) proposes that a primary motive of interpersonal behaviour is to preserve self-concepts that are predicted and certain. Furthermore, the theory suggests that people preserve self-concepts by seeking and soliciting self-confirming information from their interpersonal environment. In their application of self-verification theory to depression, Swann and colleagues (Swann, Wenzlaff, Krull & Pelham, 1992; Swann, Wenzlaff & Tafarodi, 1992) reported that depressed students requested more negative feedback from others and were rejected by others, as compared to their non-depressed counterparts (Joiner et al., 1992, 1993). This is supported by the evidence that people with a negative self-concept, including depressed people, actively seek and often receives self-verification (i.e., negative feedback; see Alloy & Lipman, 1992; Hooly & Richters, 1992). Recently, Beike and Landoll (2000) postulate a similar model of self-consistency. They argue that dissonance is created when an individual remembers events that do not fit with their life story leading to an unpleasant feeling and well-being reduction. According to Beike and Landoll (2000), the dissonance can be reduced or eliminated through three
methods of consistency resolution processes, or what they call cognitive reactions. One type of these proposed methods is justifying the inconsistency by explaining away the inconsistent events via an external factor (i.e., attributing the event to someone or something else rather than the self). An important implication of this model is that the consistency of the memories with the view of the lifetime period will determine the well-being rather than the evaluative content of memories (pleasant vs. unpleasant) and/or cognitive reactions.

In a recent application of this theory of cognitive reaction to autobiographical memory in university students, Beike and Landoll (2000) reported that students using more external attribution to restore inconsistency preserved well-being after inconsistent but not consistent recall. Furthermore, the mere presence of inconsistent reaction did not evoke more external justification. As these findings were found among university students, the interest of the present study was to examine these predictions with clinical depressed patients. Casual attributions are powerful bases for prediction and control (Heider, 1958; Forsterling & Rudolph, 1988) and play a central role in social cognition (Buchanan & Seligman, 1995). Causal attributions may be internal (the event’s causation be attributed to dispositional factors within ourselves) or external (the event is caused by dispositional factors within another person of situational factors). The “self-serving attributional bias”, the tendency to attribute positive outcomes to an individual’s own actions, but negative outcomes to external factors, is well established (Musson & Alloy, 1988) and is generally believed to maintain a positive self-concept (Ross & Nisbett, 1991; Tennen & Herzberger,
1987). In addition, people also tend to attribute their own behaviour to situational or external causes and attribute the behaviour of other people to dispositional factors (Ross, Green & House, 1977). Ross and Nissbett (1991) interpret this ‘fundamental attribution error’ as a reflection of the fact that the situational explanations for an individual’s own actions are relatively accessible, unlike factors that may have contributed to the behaviour of other people. Abnormal attributional style plays a casual role in psychological disorders. Particularly, people with depressed mood make excessively internal, global and stable attributions for negative events (Abramson et al., 1989; Abramson et al., 1978; Brewin, 1986; Robins & Hayes, 1995; Sweeney et al., 1986). This pattern of attribution is generally regarded as reflecting a lack of the ‘normal’ self-serving bias (Kinderman & Bentall, 2000).

Abramson and her colleagues (1989) postulate that negative life events attributed to causes that are stable (not likely to change) and global (likely to affect many outcomes) may provoke ‘generalized hopelessness’. Thus, based on the earlier theoretical work, the present study was designed to assess whether depressed people are able to adapt their attributions to buffer threats to well-being. Precisely, it aimed to address the following question: do depressed patients use justification as cognitive reaction efficiently for their inconsistent recalled memories? It is expected that depressed patients might have dysfunctional cognitive reactions to memories and, possibly, might fail to use external justification as a method of consistency reduction. It was hypothesized that depressed people will fail to explain away inconsistency with an external attribution when they recall unpleasant events. The relationship
between recall consistency (how consistent a memory is with a time period), well-being, and the view of the past lifetime in general were also investigated.

3.2 Method

3.2.1 Participants

**Depressed patients:** One-hundred and thirty-two Kuwaiti psychiatric inpatients and outpatients of the general psychiatric hospital in Kuwait aged 20-54 years took part. According to the hospital’s clinical team, and the structured clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon & Williams, 1995), these patients met Research Diagnostic Criteria (Spitzer, Endicott & Robins, 1978) for primary definite major depressive disorder and had no other major psychiatric diagnosis (e.g., schizophrenia, alcoholism, eating disorder, obsessive-compulsive neurosis) or major physical illness. Ninety-six patients were diagnosed with recurrent depression within the past two years and 36 patients with first episode of depression.

**Reference Group:** Eighty-four Kuwaiti participants aged 20-54 years were recruited from a Kuwait psychiatric hospital. These were visitors, working as clinicians, or students from Kuwait telecommunication institute and technology and nursing institute. They voluntarily participated and served as a non-depressed comparison group.
Ethical approval was gained from the local psychiatric hospital (see Chapter 2) and all participants gave verbal informed consent. The participants in the depressed and non-depressed group were recruited to be similar in their age and gender distribution. Educational levels were equated by ensuring that all participants had spent less than 3-years at college. Both patient and control participants were recruited on the basis of opportunity rather than on any systematic selection procedure. The sample therefore represents a convenience rather than a random sample.

3.2.2 Design

The design of the present study was an independent sample ANOVA, similar to that used by Bieke and Landoll (2000). Each participant in the two groups, depressed and matched control, recalled three past events of a specific period and a particular evaluative content (pleasant or unpleasant). The participant next answered attribution questions that measured internal and external causal attribution (justification variables). An event inconsistent with the lifetime period view may be discounted as caused by something external to the self, and therefore unimportant to the view of one self. Thus, the more external the attribution is, the greater the degree of justification. Participants then completed the subjective well-being scales. Finally, each participant filled out the evaluations of the past lifetime period on the semantic scales. The dependent variables are then internal justification, subjective well-being, and the view of the past lifetime. The independent variables are the recall consistency (consistent vs. inconsistent), memory recall valence (pleasant vs. unpleasant) and the classification of the mood states based on BDI scores as non-depressed (BDI < 10),
mild (BDI 10 – 16), moderate (BDI 17 – 29), and severe depressed (BDI 30 – 63) individuals.

3.2.3 Measures and Procedure

After obtaining informed consent, participants completed the Beck Depression Inventory. They were then asked to complete a five-page booklet concerning their “thoughts about events that you have experienced in your life” (see Appendix 3). The first page contained the instructions and participants were asked to work through the booklet at their own pace. The second page asked participants to think of a time period that they could remember well that occurred at least three years ago. This was to ensure that the period recalled was before the onset of their depression. Participants selected one period from their life (e.g., high-school) and indicated whether this was generally a pleasant or an unpleasant period one. Participants then generated a total of three memories from this period. For each memory recalled they first wrote down one or two sentences about that memory (e.g., my graduation day. I suddenly realized that my shoes were different colors) and then evaluated whether this was a pleasant or unpleasant memory. The only restriction on the memory was that it must have lasted less than one day (i.e., seconds, minutes or hours). If the participant showed signs of struggling to find a specific time period, the experimenter provided them with some examples (e.g., their childhood, high school days, teenage period, etc.).
After writing down their three memories, participants rated each memory on two 12-point causal attribution scales (justification scales). Participants were asked to rate the degree to which each event has been caused by themselves (internal attribution), and or by factors external to themselves (external attribution). Finally, a measure of well-being, the 5-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) was completed by the participants, followed by a measure of the evaluation of the past lifetime period, a 10 of 7-point semantic differential items, a subset of the 19 items in the Time Attitude Scale (TAS; Nuttin & Lens, 1985). Analysis of the internal reliability (Cronbach’s alpha) showed that the three scales showed high reliability coefficients: Casual Attribution Scale (0.78), Time Attitude Scale (0.93), and Satisfaction With Life measure (0.89).

3.2.3 Calculation of Measures

Three measures were calculated. First, the internal justification was calculated by combining the average of the three internal scales of the only relevant memories with the average of the three reversed score external scales of the only relevant memories to create a variable called internal justification. Second, the view of the past life time period was calculated by averaging the responses on the 10 items of the Past Time Attitude scale (TAS; Nuttin & Lens, 1985), with reverse-worded items reverse-scored, such that lifetime period views had a theoretical range of 1 (very negative) to 7 (very positive). Then it was classified into two values: unpleasant (0 through 3.99), and pleasant (4 through 7). Finally, the well-being score was calculated by averaging the degree of agreement with the five (all positively worded) items of the SWLS.
The result was a score with a theoretical range of 1 to 7, with higher numbers indicating greater well-being. Then it was classified into two values: low well-being (0 through 3.5), and high well-being (3.6 through 7).

3.3 Results

Table 3.1 shows the basic demographics for the study population. A single factor independent ANOVAs showed that the four groups did not differ in age (F < 1) and did not differ in their distribution of males/females (χ²(2) = 1.25, p = .74). Thus, the four groups were well balanced on these variables. Analysis of the differences between the four groups showed those significant effects for both the number of positive events recalled (NPER; F(3,212) = 4.66, p = .004) and the valence of the time period selected (TPE; F(3,143) = 24.1, p < .001).

Post-hoc analysis, using the Tukey test (MSE = 0.893, critical difference is 0.475 @ 5% and 0.579 @ 1%), showed that the number of positive events recalled was equivalent for the reference, mild, and moderate depression groups, but the severe group recalled fewer positive memories (p < .01). For the time period evaluation (MSE = 0.238, critical difference is 0.245 @ 5% and 0.299 @ 1%) the scores for reference, mild and severe groups do not differ, but the moderate group has a higher score than the other three groups (all p < .05). Thus, the severe group recalled fewer positive memories than the other groups, but the moderate group recalled more memories from a pleasant time period than the other groups.
Table 3.1. Demographic characteristics of the four depression groups.

<table>
<thead>
<tr>
<th>Depression Group</th>
<th>BDI Score</th>
<th>Age (years)</th>
<th>% Males</th>
<th>TPE ²</th>
<th>NPER ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Depressed (n=84)</td>
<td>4.6</td>
<td>33.8</td>
<td>50%</td>
<td>1.79</td>
<td>.49</td>
</tr>
<tr>
<td>Mild Depression (n=23)</td>
<td>11.0</td>
<td>32.6</td>
<td>39%</td>
<td>1.70</td>
<td>.48</td>
</tr>
<tr>
<td>Moderate Depression (n=26)</td>
<td>25.5</td>
<td>34.2</td>
<td>42%</td>
<td>1.54</td>
<td>.77</td>
</tr>
<tr>
<td>Severe Depression (n=83)</td>
<td>36.2</td>
<td>33.8</td>
<td>49%</td>
<td>.60</td>
<td>.36</td>
</tr>
</tbody>
</table>

¹ Time Period Evaluation, proportion of participants selecting positive time periods
² Number of Pleasant Events Recalled (max = 3) from the TPE selected

The findings are presented in three main sections, each one concerned with one of the three dependent variables: Internal justification reaction, subjective well-being measure, and the Past Time Attitude. The mean values on each of the three dependent measures are shown in Table 3.2.

3.3.1 Internal Justification

A two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the average of the internal attribution for the memories recalled (internal justification). The analysis showed that there was no effect of recall consistency on internal attribution (F < 1). However, there was a
main effect of depression group ($F(3,208) = 8.28, p < .001$) and a depression group x recall consistency interaction ($F(3,208) = 2.42, p < .001$).

Table 3.2: Mean score for internal justification, well-being, and the past-time attitude as a function of depression groups and recall consistency

<table>
<thead>
<tr>
<th>Recall Consistency</th>
<th>Depression Group</th>
<th>N=</th>
<th>Internal justification</th>
<th>Well-being</th>
<th>PTA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent Reference</td>
<td>31</td>
<td>2.96</td>
<td>3.78</td>
<td>3.57</td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>8</td>
<td>2.58</td>
<td>4.62</td>
<td>4.53</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>12</td>
<td>2.28</td>
<td>1.87</td>
<td>4.16</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>57</td>
<td>3.13</td>
<td>1.85</td>
<td>4.61</td>
<td></td>
</tr>
<tr>
<td>Inconsistent Reference</td>
<td>53</td>
<td>2.57</td>
<td>3.93</td>
<td>4.05</td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>15</td>
<td>2.35</td>
<td>4.33</td>
<td>3.66</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>14</td>
<td>2.87</td>
<td>2.01</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>26</td>
<td>3.22</td>
<td>2.15</td>
<td>4.52</td>
<td></td>
</tr>
</tbody>
</table>

The form of the depression group x recall consistency interaction is shown in Figure 3.1. Post-hoc analysis, using the Tukey test (MSE = 0.600; critical difference @ 5% is 0.648 and @ 1% is 0.743), showed the following effects. For the consistent recall condition, internal justification scores for the moderately depressed group (2.19) were lower than those for the reference group (2.96, $p < .05$) and the severely depressed...
group (3.13, p < .01). The scores for the mildly depressed group (2.50) were intermediate between the reference and the moderate group, and did not differ significantly from either of them. The scores for the severely depressed group and the reference group did not differ. For the inconsistent condition, internal justification scores did not differ significantly for the reference (2.49) and mildly depressed (2.36) and moderately depressed (2.88) groups. While the scores for the severe group (3.22) did not differ significantly from those of moderate group, they were higher than those for the mild group (p < .01) and the reference group (p < .05).

Comparing scores within depression groups, there were no differences between the internal justification scores for the reference group, the mild group and the severe group. However, internal justification scores for the moderate group were higher in the inconsistent recall condition (p < .05).

In conclusion, the pattern of internal justification scores differs for consistent and inconsistent memory recall and depression status. When the memory recalled was consistent with the individual’s evaluation of the lifetime period (consistent recall) internal justification scores tended to decline from the reference to the moderately depressed group, but then showed a sharp increase for the severely depressed group. In contrast, when the memory recalled was inconsistent with the individual’s evaluation of the lifetime period (inconsistent recall) within the depression groups internal justification scores increased. Compared to the reference group, the severely depressed group have equivalent internal justification scores for memories that are
consistent with their evaluation of the lifetime period, but have higher internal justification scores for memories that are inconsistent with that lifetime period.

Figure 3.1. The influence of recall consistency on internal justification scores as a function of depression group.

Memory Recall Valence. To investigate the impact of recall valence (pleasant vs. unpleasant) on internal justification cognition, a two-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant), depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the internal justification scores. The analysis revealed borderline effects of memory recall valence (F (3,208) = 3.19, p = .075), depression group (F (3,208) = 2.24, p = .084) and a highly significant memory recall valence x depression group (F (3,208) = 6.06, p = .001).
Figure 3.2. The influence of memory recall valence on internal justification scores as a function of depression group.

Figure 3.2 illustrates the memory recall valence x depression group interaction. Post-hoc analysis, using the Tukey test (MSE = 0.607, critical difference = 0.653 @ 5% and 0.767 @ 1%), showed the following effects. For pleasant memories, internal justification scores were equivalent for all groups, although the difference between the reference and moderate groups approached significance (difference = 0.607, critical difference = 0.653). For the unpleasant memories, the internal justification scores were equivalent for the reference and mild groups, but the moderate showed higher levels of internal justification than the mild (p < .05). The moderate score did
not differ than the reference and severe group. The severely depressed group showed higher levels of internal justification than the reference and the mild (both \( p < .01 \)) depression group. The only differences between pleasant and unpleasant memories were the higher internal justification scores for unpleasant memories for the moderate (\( p < .01 \)) and severe (\( p < .05 \)) groups. Thus, higher depression groups (moderate and severe) attribute more internal justification for unpleasant memories compared to pleasant memories, with the level of internal justification not differing for pleasant memories. This pattern is similar to that shown in Figure 3.1.

### 3.3.2 Well-being

An equivalent two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the average score on the well-being scale. The analysis showed that there was no effect of recall consistency on well being (\( F < 1 \)), a main effect of depression group (\( F(3,208) = 68.5, p < .001 \)), and no depression group x recall consistency interaction (\( F < 1 \)). Post-hoc analysis, using the Tukey test (MSE = 0.966, critical difference @ 5% is 0.675 and @ 1% is 0.818), showed that well-being scores were marginally higher in the mildly depressed group compared to the reference group (3.82 vs. 4.48, \( p = .057 \)). The moderate (1.94) and severely (2.00) depressed groups had lower well-being scores than both the reference and mildly depressed group (all \( p < .01 \)), but the scores for the moderate and severe groups did not differ. Thus, well-being is substantially lower in the higher depressed groups compared to the reference group, with a tendency for higher well-
being in the mildly depressed group. It is also important to note that participants classified as recalling memories consistent with the lifetime period do not differ in their levels of well-being from those who recalled memories inconsistent with the lifetime period.

According to Beike and Landoll (2000) internal justification has a moderating role on well-being only for inconsistent recall. Specifically, those showing less internal justification (i.e., more external attribution) would be expected to show higher well-being scores under inconsistent recall compared to consistent recall. To investigate this, participants were classified into low vs. high internal justification groups based on a median split. Participants with internal justification scores of less than 3.00 were classified as the low and those with scores of 3.00 and more were classified as the high group.

However, a three-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent), internal justification group (high vs. low) and depression group (reference vs. mild vs. moderate vs. severe depressed) gives rise to extremely low numbers of participants for certain combinations of factors (e.g., n = 3 for mild depression, consistent recall and high internal justification). Given the problems of small group size noted above, and the influence of depression on well-being scores, the analysis was conducted with the reference and mild groups combined (low depression group), and the moderate and severe groups combined (high depression group). In this design, the cell sizes generally ranged between 20-30 with the lowest
for the high depression, low justification, inconsistent recall group (n=12) and the highest for low depression, low justification, inconsistent recall group (n=48).

The analysis showed that well-being was equivalent for the low and high internal justification group (3.04 vs. 2.97, F < 1), was higher in the low depression group (3.98 vs. 2.03, \( F(1,207) = 175.16, p < .001 \)), and higher after consistent recall (3.16 vs. 2.86, \( F(1,207) = 4.14, p = .043 \)). The depression group x internal justification interaction (\( F(1,207) = 3.57, p = .060 \)) approached significance. The form of this marginal interaction is shown in Figure 3.3. Post-hoc analysis using the Tukey test (MSE = 0.979; critical difference @ 5% is 0.506 and @ 1% is 0.617) showed the following effects. Well-being was higher in the low depression group for both high and low internal justification groups (all \( p < .01 \)). Although it appears from Figure 3.3 that well-being is higher for the low depression group when internal justification is high, and higher for the high depression group when internal justification was low, neither of these differences were significant. Thus, post-hoc testing failed to localise the source of this borderline interaction.

In summary, regardless of the internal justification group (low vs. high) well-being is substantially lower in the higher depressed groups compared to the reference and mild depressed groups. However, well-being scores did not differ within each of the two (low vs. high) depression group. Finally, those participants with consistent recalled memories showed higher levels of well-being compared to those participants with inconsistent recalled memories.
In conclusion, no support was found for Beike and Landoll’s (2000) prediction that justification maintains well-being only after inconsistent recall. Well-being was found to be elevated after consistent rather than inconsistent recall. Furthermore, the presence of internal justification (high & low) did not reliably influence well-being. Another prediction made by Beike and Landoll (2000) is that the evaluative content of memories (pleasant vs. unpleasant) has no direct impact on well-being. Rather, it is proposed that the consistency of the memory’s content with the view of the lifetime period is what determines well-being. The next section therefore examines this prediction concerning memory recall valence.
Memory Recall Valence. To investigate the impact of the evaluate content of memories on well-being, a three-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant), internal justification group (high vs. low) and depression group (low vs. high) as the three factors, was conducted on well-being scores. As earlier, there were main effects of depression group ($F(1,207) = 136.7, p < .001$) and no effect of internal justification group ($F < 1$). In addition, the main effect of recall valence showed that those recalling pleasant memories had higher levels of well-being ($3.24$ vs. $2.82$, $F(1,207) = 7.18, p = .008$). Finally, the internal justification x memory recall valence interaction ($F(3,200) = 8.55, p = .004$) was significant, but no other interactions reached significance.

The form of the internal justification group x memory recall valence interaction is shown in Figure 3.4. Post-hoc analysis, using the Tukey test (MSE = 0.950; critical difference @ 5% is 0.498 and @ 1% is 0.605), showed the following effects. For the low internal justification group, well-being was equivalent for pleasant and unpleasant memories. In contrast, for the high internal justification group, well-being was higher when the memories recalled were pleasant ($p < .01$). The difference between the low and high internal justification groups for unpleasant memories was not significant, but the difference for pleasant memories approached significant (actual difference = .488, critical difference @ 5% = .498).
In conclusion, the low (reference and mild) depression group showed higher well-being scores than the high (moderate and severe) depression group. The effect of memory recall valence on well-being was only present in the high internal justification group where well-being was higher when pleasant memories were recalled. Thus, in contrast to Beike and Landoll’s (2000) claim, memory recall valence does have an impact on well-being, but only in those who have high internal justification scores and recalled pleasant memories.

Figure 3.4. The influence of internal justification groups (low vs. high) on well-being scores as a function of the memory recall valence.
3.3.3 Past Time Attitude

A two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the average of scores from the Past Time Attitude scale. Higher scores on this scale indicate that participants had a more positive attitude to their past life. The only effect to achieve significance was the main effect of depression group (F(3,208) = 5.01, p = .002). Specifically, there was no effect of recall consistency (F < 1) and no recall consistency x depression group interaction (F(3,208) = 1.98, p = .118).

Post-hoc analysis, using the Tukey test (MSE = 1.449; critical difference @ 5% is 0.594 and @ 1% is 0.720), of the main effect of depression showed that the reference (3.81), mild (4.10) and moderate (4.04) groups did not differ, but the severe group (4.57) had higher scores than the reference group (p < .01). Scores for the mild, moderate and severe groups did not differ. Thus, the severely depressed group had a more positive view of their past life compared to the reference group. The scores for the mild and moderate groups are intermediate.

Memory Recall Valence. The role of memories valence on the evaluation of past time attitude was also investigated. A two-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the average of past time attitude. The analysis showed no main effect of depression (F(3,
215) = 1.625, p = .185), a main effect of memory recall valence (F(1,215) = 13.024, p < .001) and a significant interaction between depression groups and memory recall valence (F (3,215) = 4.714, p = .005).

Figure 3.5. The influence of memory recall valence on Past Time Attitude scores as a function of depression group

The form of depression groups x memory recall valence interaction is shown in Figure 3.5. Post-hoc analysis, using the Tukey test (MSE = 1.237; critical difference @ 5% is 0.918 and @ 1% is 1.06), showed the following effects. The reference group tend to evaluate their past life time positively when they recall unpleasant event (4.75 vs. 3.27, p < .01), as did the mild group (4.7 vs. 3.49, p < .01). In
contrast, the moderate and severe groups show no differences as a function of memory recall valence. That is, their evaluation of their past life did not depend on the type of memory they recalled (i.e., memory recall valence).

In conclusion, higher depression groups (moderate vs. severe) show no differences in their evaluation of their past life that depended on the valence of the memories they retrieved. In contrast, reference group and mild depressed group showed a more positive evaluation of their past life when they recalled unpleasant compared to pleasant memories.

3.4 Discussion

According to self-verification theory (Swann, 1983, 1987, 1990) and cognitive dissonance theory (Festinger, 1957), when recalled events (behaviour) and lifetime periods (attitudes) conflict, dissonance is aroused. The two inconsistent cognitions may be brought into consonance if one of them is explained away. An event inconsistent with the lifetime period view may be discounted as caused by something external to the self, and therefore unimportant to the view of oneself. Justification may then be used as a coping strategy intended to reduce dissonance.

In a similar way, Beike and Landoll (2000) argue that cognitive reactions to retrieved memories influence feelings of well-being. Their findings suggest that when the valence of a retrieved memory does not match that of the valence of the time period
from which that memory was retrieved, this leads to cognitive dissonance. Failure to deal with the dissonance arising would lead to unpleasant feelings. However, consistency-restoring reactions can occur to minimize the dissonance and maintain consistency with the life time period. Interestingly, they argue that it is not the pleasantness or unpleasantness of the retrieved memory that is the threat to well-being, but whether or not it is consistent with the life time period from which it was retrieved. Thus, it is only the recalling of memories whose valence is inconsistent with the life time period that are a threat to well-being. One form of cognitive reaction that restores well-being is to distance or protect the self from the cause of the memory, typically by relating the cause to external, rather than internal, factors. Thus, Beike and Landoll (2000) argue that the cognitive dissonance caused by the recall of inconsistent memories is “explained away” by external attribution.

Beike and Landoll (2000) based their conclusions on research with undergraduate students, but the findings are of relevance to individuals suffering from depression. People with depression typically have higher levels of internal attribution, have a high self-centred focus, but also have many unpleasant memories (Williams, 1996; Rizley, 1978; Lloyd & Lishman, 1975). This leads to the idea that perhaps one of the reasons why depression remains a chronic condition is that cognitive dissonance is not resolved because the depressed person’s internal attribution style. That is, they do not employ consistency-restoring external attribution to reduce inconsistency and therefore their well-being suffers as a consequence. The main aim of the present
study, therefore, was to adapt the Beike and Landoll (2000) methodology to investigate these implications for a sample of depressed patients.

Similar to Beike and Landoll’s observation (2000), we found that recall consistency did not evoke more internal justification overall. However, there was a difference in the pattern of internal justification for consistent and inconsistent memory recall and depression status. It was found that when the memories recalled were inconsistent with the life time period, moderately depressed participants were making more internal attribution. Thus, they were attributing the inconsistent memories more to internal factors (e.g., the self) compared to the consistent one. For consistent memories, attribution was more to external factors. This pattern of attribution is consistent with Beike and Landoll (2000) view because it would not be expected to protect well-being. The severely depressed participants made more internal attribution for both consistent and inconsistent memories; a total reverse of a phenomenon termed the fundamental attribution error first identified by Heider (1958). For example, people tend to underestimate the impact of situational factors and to overestimate the role of dispositional factors in controlling behaviour. In contrast, the reference participants were making low internal justification (high external attribution) compared to the severely depressed group when they recalled memories that were inconsistent with their lifetime period, a phenomenon known as the self-serving bias (Fiedler, Semin & Koppetsch, 1991; Green & Gross, 1979, Mullen & Riordan, 1988; Ross & Fletcher, 1985). For example, people are more
likely to attribute favourable outcomes to the self than to someone else, and are more likely to attribute unfavourable outcomes to another person than the self.

Several studies, inspired by the “learned helplessness” approach to depression, have been concerned with the attributional basis of depression. For example, Rizley (1978) found that depressed students viewed internal factors as more important in causing their failure on a number-guessing task than did non-depressed students. Similarly Klein, Fencil-Morse and Seligman (1976) found that depressed students tended to attribute failure on discrimination problems to internal factors, while non-depressed students attribute failure on the problems to external factors. In addition, Seligman, Abramson, Semmel and Von Baeyer (1979) devised an attributional style questionnaire in which participants were asked to imagine themselves in different situations and to describe the major cause of the outcome; then the participants rated that cause on internality, stability, and globality. In explaining failures, depressed people rated the causes as more internal, stable, and global than did non-depressed people. In explaining successes, their attributions were more external and unstable. In agreement with these researches, the higher depressed patients were found to show more internal attribution toward unpleasant recalled experiences compared to pleasant recalled memories.

The clinical literature has many accounts of the capacity of people’s preconception of themselves to bias their memories or interpretations of event and thereby to influence their expectations and subsequent behaviour. Particularly interesting are findings on
the phenomenon of depression that support previous observation. Various investigations using clinical populations have found that self-focusing manipulations maintain or enhance depressed mood among clinically depressed patients, whereas externally manipulation alleviate the depressed mood (Fennell & Teasdale, 1984; Gibbons et al., 1985). Another line of research has shown that sad mood induces self-focused attention (Sedikides, 1992; Wood, Saltzberg & Goldsamt, 1990). This type of dysfunctional attribution was described by Nisbett and Ross (1980) as the tendency to attribute overt behaviours to corresponding personal dispositions, thereby underestimating the casual role of environmental influence relative to such dispositions and overestimating the degree of cross-situational consistency in individuals' behaviour. The underlying psychological process for the effect of this dysfunctional attributional style is the sense of helplessness (Abramson et al., 1978; Peterson & Seligman, 1984) and hopelessness (Abramson et al., 1989) associated with pessimistic explanatory styles. Depressed individuals were found to hold pessimistic and “hopeless” beliefs, to react to reinforcement in a pessimistic manner, and show a general negative bias in their attributions about events even if those events were not self-relevant (e.g., Riskind, Rholes, Brannon & Burdick, 1987; Alloy & Ahrens, 1987; see also Abramson et al., 1989; Sweeney et al., 1986). Overall, these studies and the present findings show that this pattern of attribution is dominant in depressed patients generally.

It was assumed by Beike and Landoll (2000) that internal justification maintains well-being after inconsistent recall but not after consistent recall. However, this is not the
case in our findings. No effects of recall consistency were found after inconsistent recall. Rather, it was found that, regardless of the internal justification group (low vs. high), well-being was substantially lower in the higher depressed groups compared to the reference and mild depressed groups. Three possible reasons for this discrepancy in results are discussed below.

Firstly, the participants in Beike and Landoll’s (2000) study were undergraduate students, who were much younger than the participants in the present study. Thus, this study included older and more mature people. Compared to young people, old people tend to view their lives as more of a “steady state” than an upward trajectory (Ross, 1989; Ryff, 1991). Therefore, old people maybe less likely to show the relationship between consistency resolution and higher well-being when they recall positive events from negative lifetime periods (or vice versa).

Secondly, the possibility of individual’s differences in the participants of both studies should be considered. It is important to note that several individual differences moderate the strength of self-enhancement concerns. Evidence suggested that self-enhancement concerns are more influential in those with a strong positive view of themselves; for example those with high self-esteem (Baumgardner, Heppner & Arkin, 1986; Brown & Gallagher, 1992; Brown & Smart, 1991; Crocker, Thompson, McGraw & Ingerman, 1987; Swann, 1987; Wood, Beech, Taylor, Michela & Gaus, 1994), who are not shy (Alden, 1987; Meleshko & Alden, 1993), who have a high certainty and clarity about their self-concept (Baumgardner, 1990; Campbell et al.,
are more self-conscious (Carver, Antoni & Scheier, 1985) and non-repressors (Davis, 1987; Hansen & Hansen, 1988). In addition, people high in achievement motivation (Koestner & McClelland, 1990; McClelland & Koestner, 1992) and competence valuation (Epstein & Harackiewicz, 1992; Harackiewicz, Manderlink & Sansone 1984; Reeve & Deci, 1996) are more likely to be influenced by self-improvement concerns. This profile of self-enhancement concerns may be greater in the young university student sample of Beike and Landoll (2000) than in the more mature non-university sample studied here.

Lastly, differences in culture context need to be considered. More specifically, the individualism vs. collectivism dimension of culture (Kim, Triandis, Kagitcibasi, Choi & Yoon, 1994) may play a moderating role in the needs for self-verification and enhancement. For example, members of collectivistic cultures (e.g., Oriental) are less likely than members of individualistic (e.g., Western) culture to have unrealistically optimistic beliefs (Heine & Lehman, 1995) and to exhibit the self-serving bias (Kashima & Triandis, 1986; Isozaki & Takahashi, 1988; Shikanai, 1984). Furthermore, there is ample ethnographic and social experimental evidence indicating that culture is transmitted through the cognitive process of modelling or observing events and people, and through other information sources (Calhoun; 1956, Mischel, 1968; Shore, 1996). The cultural knowledge and social experience the individual carries provide the interpretive framework that guides their reasoning and problem solving processes. In other words, there is an aspect of “cultural boundedness” to cognitive processes (Derry, 1996; Pribram, 1971). Because these internalized
schemas guide the processing of information, the more entrenched a belief, value, or social role, the more difficulties it is for the individual to change that schema, even when new and convincing corrective information is provided (Arce, 1999). The more collective culture of Kuwait, compared to the more individualistic culture of the USA, may therefore be another source for discrepancies in the findings.

The above findings lead us to the debate over the importance of consistency versus positivity strivings that has gone on for several decades, mostly in the literature on self-enhancement versus self-consistency processes (for recent reviews see Brown, 1998; Sedikides & Strube, 1997). Do people really need consistency more than they need simply to cling on to a pleasant memory? In another words, do people need self-verification more than self-enhancement? One answer to this question may be viewed in the light of Shrauger's (1975) proposition. Shrauger distinguished between cognitive responding (e.g., perceptions of feedback self-descriptiveness, feedback recall) and affective responding (e.g., pleasure or disappointment resulting from feedback). He postulated that cognitive responding follows a self-verification pattern, whereas affective responding follows a self-enhancement pattern. Swann et al. (1987; see also McFarlin & Blascovich, 1981) reported findings consistent with this proposition. Participants delivered a speech and received feedback, ostensibly from another participant, as to how self-confident they appeared to be. This bogus feedback was either favourable or unfavourable. Subsequently, participants indicated their reactions to feedback. Cognitive reactions were indexed in terms of perceived feedback accuracy, perceived feedback diagnosticity, perceived evaluator
competence, and internal versus external attributions regarding feedback. Affective reactions were indexed in terms of the Multiple Affect Adjective checklist (Zuckerman & Lubin, 1965), which measures depression, anxiety, and hostility. Participants with negative self-conceptions regarded unfavourable feedback as more accurate and diagnostic than favourable feedback, perceived the evaluator who delivered unfavourable feedback as more competent than the evaluator who gave favourable feedback, and were more likely to make self-attribution for failure than success. At the same time, though, participants with negative self-conceptions felt more depressed, anxious and hostile when they received unfavourable than favourable feedback. Additional investigations (Brown, Collins & Schmidt, 1988; Jussim, Yen & Aiello, 1995) have also corroborated the notion that cognitive responding is self-verifying, whereas affective responding is self-enhancing. A similar pattern was found in the present study, taking into consideration the view of self-verification and self-enhancement theories as relevant for feedback from others and more public reactions to it, and Bieke and Landoll’s (2000) CRM model as relevant for remembered life events and internal, private reactions. Specifically, the findings showed that while the high depression group showed lower levels of well-being than the low depression group, those participants who recalled pleasant memories showed a tendency for higher levels of well-being compared to unpleasant recalled memories. In particular, levels of well-being were only higher when participants were in high internal justification group (more internal attribution) and had recalled pleasant memories.
Surprisingly, the severely depressed participants viewed their past lifetime period positively regardless their memory recall valence (pleasant vs. unpleasant). That positive evaluation of the past may support the belief that their past lifetime period, unlike their current one, was fulfilling. A belief that would act to maintain and even deepen their current negative mood state, and it might be noted, a belief that also justifies, in this case the negative, and makes their mood state consistent with their beliefs and life story. Interestingly, the reference and mild depressed group showed more positive evaluation of their past life when they recalled unpleasant compared to pleasant memories. The data on recall of past life events can also be characterized as reflecting a tendency to exaggerate the consistency between past and present selves. People remember themselves as being more like their current selves than was actually the case. Bower (1981) reported that ratings of the effective quality of past events shift in the direction of current mood.

3.5 Summary

Highly depressed patients have a dysfunctional attributional style, and a mood-congruent memory bias to recall negative events while paradoxically viewing the past as being generally more positive than the present. Justification as a way of dealing with inconsistent negative memories appears to be ineffective in this group. Their negative mood state appears to affect their attributional style, and beliefs about the past. Thus, their reactions to memories do not restore consistency and their well-being satisfaction remains correspondingly low.
Chapter 4 Depression and the Mediating Role of Outweighing

4.1 Introduction

Many psychologists argued that consistency is an important indicator of successful adoption and good mental health (Funder, 1995; Rogers, 1959). Recent research shows that individuals who describe themselves relatively consistent in different situations report higher levels of well-being than do individuals who have more inconsistent or fragmented self-concepts (Block, 1961; Donahue, Robins, Roberts & Oliver, 1993; Sheldon, Ryan, Rawsthorne & Ilardi, 1997).

Festinger (1957) viewed consistency as a powerful basic drive, and Lecky (1945) described the need for self-consistency as a fundamental human motive. According to dissonance theory, people prefer information that supports their beliefs and avoid information that contradicts these cognitions. The intensity of dissonance depends on the relative proportion of dissonant and consonant cognitions in the person’s cognitive system as well as on the cognitions’ relative importance. Festinger (1957) posited that the perception of an inconsistency among an individual’s cognition generates a negative interpersonal state (dissonance), which motivates the individual to seek and employ a strategy to alleviate this aversive state. Festinger suggested that selectively looking for consonant information and avoiding contradictory information could reduce cognitive dissonance. That is, adding more information that is
consonant with the individual’s belief system in order to eliminate the inconsistency and maintain well-being.

In the first experiment, participants were asked to provide ratings of internal justification for recalled memories to determine whether low ratings (i.e., external attribution) were associated with the recall of inconsistent events. The present experiment was conducted to determine whether the same pattern would be obtained for an entirely different consistency-restoring cognitive reaction, that of “outweighing”. The experiment was designed to investigate the idea that when an event memory that threatens the integrity of the life story is brought to mind, more cognitions consistent with the lifetime period maybe sought out. In a study of university students, Beike and Landoll (2000) report that outweighing was linked with higher well-being only when the memory recalled was inconsistent with the lifetime period it came from, and that the valence (i.e., positivity or negativity) of the recalled memories was not directly associated with well-being. However, to our knowledge, this mode of dissonance reduction has not been examined in people suffering from depression and this is the central aim of the present study.

Two influential theories of emotion and cognition, those of Beck (e.g., Beck et al., 1979; Beck & Clark 1988) and Bower (1981), predict that depression should be associated with cognitive biases that operate in three important areas of information processing: attention, interpretation, and memory. This prediction accords well with the evidence that depressed individuals report more dysfunctional cognitions than
non-depressed individuals (for review, see Haaga, Ernst & Dyck, 1991). Thus, the focus of this study was to investigate whether clinically depressed patients show this type of outweighing reaction when recalling inconsistent events. That is, do they recollect other events that are consistent with the valence of the lifetime period they are recalling from? A range of research shows that following a discrepant behaviour, people with positive self-expectancies (Aronson & Carlsmith, 1962; Brockner, Wiesenfeld & Raskas, 1993) or high self-esteem (Gibbons, Eggleston & Benthin, 1997; Glass, 1964; Maracek & Mettee, 1972; Stone, 1999) report more attitude, or behaviour change than people with negative expectations or low self-esteem. In addition, numerous studies have shown that depressed patients are more impaired on tasks that require more effortful information processing compared to tasks that require more automatic information processing (Weingartner, Cohen, Murphy, Martello & Gerdt, 1981; Cohen, Weingartner, Smallberg, Picker & Murphy, 1982; Roy-Byrne, Weingartner, Bierer, Thompson & Post, 1986; Georgieff, Dominey, Michel, Marie & Dalery, 1998). Hartlage et al. (1993) have proposed a 'cognitive effort hypothesis', suggesting that cognitive deficit in depression is dependent on the difficulty of the task to be performed, with impairment increasing in accord with the cognitive effort the task requires. Challenging tasks, no matter what cognitive function they assess, will have serious detrimental effects in depressed patients. Hasher and Zacks (1979, 1984) argued that effortful processes were reduced under conditions of stress, including depression, because stress was thought to decrease cognitive capacity required for effortful processing. They suggest that no such reduction occurred in automatic operations. Furthermore, information-processing
studies in depression have suggested that disordered cognitions are most evident in situations or tasks that require sustained effort or attention (Stromgren, 1977; Weingartner, 1986). The process of outweighing requires effortful processing because the individual has to dig into previously unexplored information; to obtain, evaluate, and react to, and perhaps to even to learn from this information (Frey, 1986). As depressed individuals are characterized by low self-esteem and low self-expectancies (Brown, Bifulco, Harris & Bridge, 1986; Hammen, Marks, deMayo & Mayol, 1985; Miller, Kreitman, Ingram & Sashidharan, 1989), and as the outweighing cognition requires more effortful processing, it was hypothesized that depressed patients would lack the ability to engage in an outweighing process as a way of resolving recall inconsistency. Furthermore, the prediction of Beike and Landoll (2000) that outweighing process maintains well-being only after inconsistent recall will also examined.

4.2 Method

4.2.1 Participants

Depressed patients: Ninety-six Kuwaiti psychiatric inpatients and outpatients aged 20-54 years were recruited from a Kuwait general Psychiatric Hospital took part. According to the hospital’s clinical team, and the structured clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon & Williams, 1995), these patients met Research Diagnostic Criteria (Spitzer, Endicott &Robins, 1978) for a primary definite major depressive disorder with no other major psychiatric diagnosis (e.g.,
schizophrenia, alcoholism, eating disorder, obsessive-compulsive neurosis) or major physical illness. Fifty-five patients were diagnosed with recurrent depression within the past two years and 41 patients with first episode of depression.

**Reference group:** Seventy-six Kuwaiti non-depressed participants, aged 20-54 were recruited from a Kuwait psychiatric hospital. Theses were visitors, working as clinicians, or students from Kuwait telecommunication institute and technology and nursing institute. They voluntarily participated and served as a non-depressed comparison group. Sixteen were not used as they failed to complete the questionnaire. Thus, leave 54 controls participants.

Ethical approval was gained from the local psychiatric hospital (see Chapter 2) and all participants gave verbal informed consent. The participants in the depressed and non-depressed group were recruited to be similar in their age and gender distribution. Educational levels were equated by ensuring that all participants had spent less than 3-years at college

### 4.2.2 Measures

The materials were identical to those used in Experiment 1. They were presented to each participant in an experimental booklet with instruction on the first page. On the second page, participants were asked to think of a time period that they could remember well that occurred at least three years ago. This was to ensure that the period recalled was before the onset of their depression. Participants selected one
period from their life (e.g., childhood) and indicated whether this was a generally pleasant or unpleasant period one. Participants then generated a total of three memories from this period. The memories must have lasted less than one day (i.e., seconds, minutes or hours). Each memory was evaluated then by the participants as a pleasant or unpleasant memory. In the present experiment, participants did not use the causal attribution scale that was used in experiment 1 to rate each of the three memories recalled from a specific time-period. Rather, after providing the three memories, participants were directed to provide one additional specific memory that came to mind when they were thinking about each of the three recalled events. This is in contrast to Beike and Landoll (200) who asked their participants to generate as many memories as possible to each of the recalled events. Outweighing scores were calculated in a similar manner to that of Beike and Landoll (2000). For each of the three memories, if the additional memory had the same valence (i.e., pleasant vs. unpleasant) as the original memory it was coded as consistent. If the additional memory had the opposite valence then it was coded as inconsistent. The measure of outweighing was the proportion of inconsistent recalls. A measure of well-being, the 5-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) was given, followed by a measure of the evaluation of the past lifetime period, a 10 of 7-point semantic differential items, a subset of the 19 items in the Time Attitude Scale (TAS; Nuttin & Lens, 1985). Analysis of the internal reliability (Cronbach’s alpha) showed that the two measures showed high reliability coefficients: Time Attitude Scale (0.91), and Satisfaction With Life measure (0.95).
4.2.3 Design and Procedures

The order of measures and procedure were similar to Experiment 1. After obtaining informed consent, participants completed the Beck Depression Inventory, followed by introducing the experimental booklet. Following the memory recall task, instead of completing the attribution questions for each memory, the participants were asked to recall one additional specific event for each memory recalled from the time period as the original memory. After recalling this memory, they labelled the additional memory as either pleasant or unpleasant. Specifically, after participants had listed three events of a particular type, the next page contained the following instructions:

"You have just told us about three events or behaviours that showed pleasant or unpleasant life events. What other events or behaviours from this same time period came to mind as you were listing these events? These events may be similar to, or different from, the events you listed on the previous page. Please list these other events that came to mind below and label them as pleasant or unpleasant."

Finally, following recall, the same measure of well-being (Satisfaction With Life Scale; Diener, Emmons, Larsen & Griffin, 1985) and Lifetime period evaluation measure (TAS; Nuttin & Lens, 1985) was completed as in Experiment 1. An independent sample ANOVA design was used. The dependent variables are outweighing, subjective well-being, and the view of the past lifetime. The independent variables are the recall consistency (consistent vs. inconsistent), and the classification of the mood states based on BDI scores as non-depressed (BDI < 10), mild (BDI 10 – 16), moderate (17 – 29), and severe depressed (BDI 30 – 63) individuals.
4.3 Results

Table 4.1 shows the basic demographics for the study population. A single factor independent ANOVA showed that the four depression groups did not differ in age ($F < 1$) and did not differ in their distribution of males/females ($\chi^2(3) = 1.64, p = .651$). Thus, the four depression groups were well balanced on these variables.

Table 4.1. Demographic characteristics of the four depression groups.

<table>
<thead>
<tr>
<th></th>
<th>BDI score</th>
<th>Age (years)</th>
<th>% Males</th>
<th>TPE$^1$</th>
<th>PPER$^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Depressed (n=54)</td>
<td>4.48</td>
<td>33.5</td>
<td>52%</td>
<td>0.57</td>
<td>0.77</td>
</tr>
<tr>
<td>Mild Depression (n=21)</td>
<td>11.62</td>
<td>33.1</td>
<td>57%</td>
<td>0.62</td>
<td>0.51</td>
</tr>
<tr>
<td>Moderate Depression (n=14)</td>
<td>26.57</td>
<td>34.5</td>
<td>36%</td>
<td>0.43</td>
<td>0.55</td>
</tr>
<tr>
<td>Severe Depression (n=61)</td>
<td>36.16</td>
<td>33.7</td>
<td>51%</td>
<td>0.13</td>
<td>0.20</td>
</tr>
</tbody>
</table>

$^1$ Time Period Evaluation, proportion of participants selecting positive time periods

$^2$ Proportion of Pleasant Events Recalled (max = 3) from the TPE selected

Table 4.1 also shows information on the time period from which participants recalled their memories from (TPE) and the proportion of pleasant events recalled from that time period (PPER). Independent sample ANOVAs, with depression groups as the only factor, showed main effects for both TPE ($F(3,146) = 12.0, p < .001$) and PPER ($F(1,146) = 32.0, P < .001$). Post-hoc analysis, using the Tukey test, showed that for
TPE, the severely depressed group selected more unpleasant time periods to recall from than the reference, mild and moderate groups (p < .01). The reference, mild and moderate groups show a good balance between selecting pleasant vs. unpleasant time periods. For the Proportion of Pleasant Events Recalled (PPER scores), the memories recalled by the reference group contain more pleasant memories than those of the mild (p < .01), the mild and moderate do not differ, and the memories recalled by the severely depressed group contain more unpleasant memories (p < .01) than the moderate and mild groups. Thus, the pattern shows that the severely depressed group tended to select an unpleasant time period to recall from and the memories that they recalled tended to be predominantly negative ones.

The findings are presented in three main sections, each one concerned with one of the three dependent variables: Outweighing, subjective Well-being measure, and the Past Time Attitude. The mean values on each of the three dependent measures are shown in Table 4.2. Although Table 4.2 shows low numbers in certain groups (e.g., consistent recall, mild depression), the number of participants in the two main factors of (a) recall consistency groups (n = 80 vs. 70) and (b) depression groups (n = 54, 21, 14 & 61 respectively) are reasonable. The low numbers only compromise the reliability of the interaction between these two factors. Should the interaction approach significance, supplementary analysis will therefore be undertaken bearing in mind the findings relating to the main effects of depression groups.
Table 4.2: The Mean score of Outweighing Reaction, Well-being, and Past Time Attitude for Depression Group according to Recall Consistency

<table>
<thead>
<tr>
<th>Recall Consistency</th>
<th>Depression Group</th>
<th>N</th>
<th>Outweighing</th>
<th>Well-being</th>
<th>PTA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent</td>
<td>Reference</td>
<td>21</td>
<td>.151</td>
<td>3.84</td>
<td>3.62</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>3</td>
<td>.000</td>
<td>4.15</td>
<td>3.20</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>4</td>
<td>.583</td>
<td>1.60</td>
<td>3.33</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>52</td>
<td>.305</td>
<td>1.88</td>
<td>4.43</td>
</tr>
<tr>
<td>Inconsistent</td>
<td>Reference</td>
<td>33</td>
<td>.121</td>
<td>4.11</td>
<td>3.85</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>18</td>
<td>.083</td>
<td>4.47</td>
<td>4.73</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>10</td>
<td>.350</td>
<td>1.54</td>
<td>3.48</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>9</td>
<td>.519</td>
<td>1.67</td>
<td>4.50</td>
</tr>
</tbody>
</table>

4.3.1 Outweighing

To determine whether retrieval of lifetime-period consistent events was more likely after inconsistent recall, a two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the outweighing scores. The analysis showed a main effect of depression group (F (3,142) = 10.45, p < .001). The main effect of recall consistency (F < 1) and the depression group x
recall consistency interaction ($F(3, 142) = 2.18, p = .093$) were not significant. Post-hoc analysis, using the Tukey test ($\text{MSE} = 0.078$, critical difference @ 5% is 0.203 and @ 1% is 0.248), showed that scores for the reference and mild groups did not differ, and scores for the moderate and severe groups did not differ (see Table 4.2). However, the mild and reference groups differed from the moderate and severe groups (all $p < .01$). Thus, outweighing was more likely for the moderately and severely depressed groups.

Given the borderline interaction, and the outweighing scores for the depression group, the analysis was repeated with the reference and mild groups combined, and the moderate and severe groups combined. The interaction between the new depression group classification and recall consistency did not approach significance ($p = .207$).

*Memory Recall Valence.* To investigate the impact of recall valence (pleasant vs. unpleasant) on an outweighing cognition, a two-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant), depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the outweighing scores. The analysis revealed a main effect of depression group ($F(3,142) = 10.36, p < .001$), but no effect of memory recall valence ($F < 1$). Post-hoc analysis, using the Tukey test ($\text{MSE} = 0.077$, critical difference = 0.178 @ 5% and 0.217 @ 1%), showed that outweighing did not differ for the reference (0.133) and mild group (0.071), nor did it differ for the moderate (0.417) and severe groups

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However, the reference-mild groups did differ from the moderate-severe groups (all $p < .05$). In addition, the depression group x memory recall valence interaction ($F(3, 142) = 2.51, p = .061$) was of borderline significance. Due to the low number of mildly and moderately depressed participants, the analysis was rerun by combining the reference and mild groups (low depression) and the moderate and severe groups (high depression).

![Graph showing the influence of memory recall valence on outweighing scores as a function of depression group.]

*Figure 4.1.* The influence of memory recall valence on outweighing scores as a function of depression group.

The interaction between the new depression group classification (low vs. high) and memory recall valence was significance $F(3, 146) = 5.01, p = .027)$. Figure 4.1 shows this interaction and post-hoc analysis ($MS = 0.077$, critical difference = 0.168 @ 5% and 0.205 @ 1%) showed that, compared to the low group, outweighing was
higher for both unpleasant (p < .05) and pleasant (p < .01) recalled events in the high group. However, outweighing did not differ as a function of recall valence for the low group, but the high group produced a greater proportion of inconsistent “outweighing” memories when recalling pleasant events. Thus, while the high depression group engaged in more outweighing than the low depression group, outweighing was more common when the original recall was a pleasant event.

4.3.2 Well-Being

An equivalent two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the average score on the well-being scale. The analysis showed only a main effect of depression group (F(3, 208) = 68.5, p < .001). No effect of recall consistency on well-being (F < 1), and no depression group x recall consistency interaction (F < 1).

Post-hoc analysis, using the Tukey test (MSE = 0.876, critical difference @ 5% is 0.554 and @ 1% is 0.673), showed that well-being scores were higher in the reference (3.97) and mildly depressed groups (4.26) compared to the moderately (1.94) and severely depressed groups (2.00, all p < .01). The scores of the reference and mild groups, and the moderate and severe groups, did not differ. Thus, well-being is substantially lower in the higher depressed groups compared to the reference and mildly depressed groups. It is also important to note that participants classified
as recalling memories consistent with the lifetime period do not differ in their levels of well-being from those who recalled memories inconsistent with the lifetime period.

According to Beike and Landoll (2000), the outweighing process has a moderating role on well-being only for inconsistent recall. Specifically, it is argued that outweighing the events would be linked with increased well-being due to resolution of inconsistency. To investigate this, a categorical variable of outweighing was created based on the number of inconsistent memories the participants had listed. Those listing any inconsistent events had therefore engaged in outweighing.

Given the problems of small group size noted above, and the influence of depression on well-being scores, the analysis was conducted with the reference and mild groups combined, and the moderate and severe groups combined. A three-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent), outweighing, and new depression group (low vs. high) as the three factors, was conducted on the average score on the well-being scale. The analysis showed that well-being was equivalent for those who engaged in some outweighing and those with no outweighing (2.93 vs. 2.78, F < 1) and equivalent for consistent and inconsistent recall (2.88 vs. 2.84, F < 1). As expected well-being was higher in the low group (4.05 vs. 1.78; F (1,142) = 162.85, p < .001), and none of the interactions approached significance. Figure 4.2 illustrates the main effect of depression groups and the minimal influence that recall consistency has on well-being.
In conclusion, regardless of the outweighing group (some outweighing vs. no outweighing), well-being is substantially lower in the high, compared to low, depressed group. Thus, no support was found for Beike and Landoll’s (2000) prediction that engaging in an outweighing reaction maintains well-being only after inconsistent recall. Indeed, no effects of recall consistency were found.

**Figure 4.2.** The influence of recall consistency on Well-being scores as a function of depression group.

**Memory Recall Valence.** Another prediction made by Beike and Landoll (2000) is that the evaluative content of memories (pleasant vs. unpleasant) has no direct impact on well-being. Rather, they argue that it is the consistency of the memory’s content with the view of the lifetime period that determines well-being. To investigate this, a
three-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant), outweighing group (some outweighing vs. no outweighing) and new depression groups (reference & mild vs. moderate & severe depressed) as the three factors, was conducted on well-being scores. Again only a main effect of depression group (F(1,142) = 148.57, p< .001) was found. There were no main effects of outweighing, memory recall valence (both F < 1) and none of the interactions approached significance (F<1).

In conclusion, the reference and mildly depressed group have higher well-being scores than the moderately and severely depressed group. In addition, there appears to be no impact of memory recall valence and outweighing group on well being scores as a function of depression.

4.3.3 Past Time Attitude

A two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe) as the two factors, was conducted on the average scores from the Past Time Attitude scale. Higher scores on this scale indicate that participants had a more positive attitude to their past life. The only significant effect was that of depression group (F(3,142) = 2.83, p = 0.04). Neither recall consistency (F < 1), nor the depression group x recall consistency interaction (F < 1) approached significance.
Post-hoc analysis, using the Tukey test (MSE = 1.63, critical difference = 0.778 @ 5% and 0.947 @ 1%) revealed the following effects. The severely depressed group showed a more positive attitude to their past life (4.46) compared to the reference (3.73, p < .05) and moderately depressed (3.40, p < .01) groups. The mild group (3.96) did not differ significantly from the severely depressed group. In addition, the scores of the reference, mildly, and moderately depressed group did not differ (see Figure 4.3). Thus, the severely depressed group has more positive attitude to their past life compared to the reference and moderately depressed groups. It is also important to note that participants classified as recalling memories consistent with the lifetime period do not differ in their evaluation of their past lifetime from those who recalled memories inconsistent with the lifetime period.

In summary, the reference and moderately depressed group have lower score in their past time attitude than the severely depressed group. The mildly depressed group did not differ. In addition, there appears to be no impact of recall consistency (consistent vs. inconsistent) on past time attitude scores as a function of depression groups.
Figure 4.3. The influence of depression groups on Past Time Attitude scores

*Memory Recall Valence.* The role of memory valence on the evaluation of past time attitude was also investigated. A two-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the average score from Past Time Attitude scale. The main effect of memory recall valence ($F(1,142) = 5.17, p = .02$) showed a more positive attitude for those that recalled unpleasant memories ($4.54$ vs. $3.64$). The main effect of depression was not significant ($F(3,142) = 1.80, p = .157$), nor was the depression group x memory recall valence interaction ($F < 1$). Thus, people generally evaluated their past lifetime more positively when they recalled unpleasant memories. It is interesting to note that the main effect of depression, observed in the analysis using recall consistency, was
absent when using memory recall valence. This suggests that it was the valence of
the memories recalled by the severely depressed group that gave rise to this main
effect.

In conclusion, regardless the consistencies of recalled memories (consistent vs.
inconsistent), and the levels of depression (reference vs. mild vs. moderate vs.
severe), those who recall pleasant events were more likely to evaluate their past
lifetime lower than those who recalled unpleasant memories.

4.4 Discussion

According to cognitive dissonance theory (Fistinger, 1957), when a person holds two
inconsistent cognitions, they would experience the psychological state of cognitive
dissonance, which motivates efforts to reduce dissonance and achieve consonance.
Explaining away inconsistent actions or bringing to mind other cogitations that are
consistent with beliefs can be taken as possible actions to restore consistency
(Fistinger, 1964). Outweighing is therefore seen as a coping strategy intended to
reduce discomfort and gain consistency for the belief system.

In a parallel way, Beike and Landoll (2000) argue that people strive for a life story or
a sense of personal past that is consistent. Any threats to this consistency would leads
to cognitive dissonance and unpleasant feelings. However, consistency resolution
process can be engaged to diminish the dissonance and preserve well-being.
Specifically, Beike and Landoll (2000) demonstrated that recall of inconsistent memories leads to either appropriate cognitive reactions, or in their absence, reduce well-being. They also argued that the consistency of the memory’s content with the view of the life time period which this memory come from, will determine well-being and not the emotional content of the memory per se (e.g., pleasant vs. unpleasant). Outweighing, or recruiting additional memories consistent with the view of the life time period which memories come from, is one form of cognitive reaction that Bieke and Landoll (2000) predicted will restore consistency and minimize dissonance.

As was mentioned earlier in Chapter 3, Beike and Landoll’s (2000) arguments are based on research with undergraduate students. This is in contrast to the present findings, which relate to a clinical population suffering from depression. Based on the findings in Experiment 1, it was expected that the same pattern of results would be seen for depressed patients when engaging in outweighing cognitions. It was also expected that depressed patients might not employ outweighing as a way to protect their well-being and reduce discomfort. Simply, they might tend to use outweighing process in a way that increases their depressed mood, the same way they were found to use internal justification in Experiment 1 (e.g., with more internal attribution). The main aim of this study, therefore, was to use a similar methodology to that used by Bieke and Landoll (2000) to investigate these implications for a sample of depressed patients.
Consistent with the previous experiment, as well as Bieke and Landoll's (2000) findings, the mere presence of inconsistent recall did not motivate outweighing. There was indeed no impact of recall consistency on the outweighing process. However, the findings revealed more engagement in outweighing within the moderately and severely depressed groups compared to the reference and mild groups. As the outweighing score is the proportion of freely listed memories that were inconsistent, in terms of valence, from the original memories recalled. The present results indicate that the moderate and severely depressed groups tended to recruit additional memories consistent with their view of the time period they recalled from. Interestingly, the outweighing was employed more when pleasant memories were recalled. Thus, when they recalled pleasant memories, they tended to recall more unpleasant additional memories and these were consistent with the unpleasant time period. In contrast, when they selected a pleasant lifetime period, they tended to recall additional unpleasant memories that were consistent with the recall valence of the original memories. A body of evidence has accumulated that depressed individuals demonstrate a negative distortion of recall in that they recall negative events from their past more quickly than positive ones, unlike non-depressed individuals who recall positive events more rapidly (Lloyd & Lishman, 1975; Blaney, 1986; Williams & Broadbent, 1986). In addition, many researches have suggested that depressed people have preferential access to negative episodic memory (Blaney, 1986; Teasdale & Barnard, 1993; Williams, Watts, Macleod & Mathews, 1988). It follows that it should be easier for the high depression group to add unpleasant cognitions for the pleasant events recalled than pleasant cognitions for the unpleasant
events. Thus, they show better use of outweighing reaction with positive memories. This is consistent with the idea of the depressed people’s preferential access to negative memories. Here, it was found that about 13% of severely depressed patients selected a positive time period and recalled only 20% positive memories (see Table 4.1 for more details).

Another possible explanation is that depressed individuals may feel some kind of guilt and discomfort when they recall positive memories that are inconsistent with their current mood and their poor, negative, self-concept. Their attention and concern may circle more around enhancing and supporting their belief of inadequacy and worthlessness rather than reducing the inconsistency between their memories and the same lifetime period. This is clearly consistent with the negative attribution style (NAS) that we found in Experiment 1 and suggested to be a characteristic of depressive individuals. Furthermore, it would be congruent with the supervisory attentional system (SAS) developed by Norman and Shallice (1980) and Shallice (1988). One important aspect of the SAS is that this putative system has access to the current self-concept and the active themes, goals, and plans of that self. During memory description generation, and in the evaluation phase of cyclic retrieval from long-term memory, the activation of knowledge is influenced by the current self-concept (Conway, 1996b, p.78).

Consistent with the finding of previous experiment, no support was found for Bieke and Landoll’s (2000) prediction that engaging in an outweighing reaction maintains
well-being only after inconsistent recall. Outweighing was found to have no impact on well-being after inconsistent recall. Rather, it was found that well-being is substantially lower in the higher depressed group compared to the reference and mild depressed group regardless of either recall consistency or the outweighing cognitions. The same earlier explanation in Experiment 1 may apply as well. The population in Beike and Landoll’s (2000) study was university student were the population in the present study were a mix of young and more mature individuals who ages ranged from 20-54 years old. Older adults, on average, are found to have positive and satisfying affective lives (Carstensen & Charles, 1998) and are more adept than younger adult at avoiding negative affective states (Carstensen, Pasupathi, Mayr & Nesselroade, 2000; Charles, Reynolds & Gatz, 2001; Levenson, Carstensen, Friesen & Ekman, 1991; Mroczek & Kolarz, 1998). In addition, the possibility of individual’s differences between populations in both studies can have an impact on results differences between Beike and Landoll’s (2000) study and the present one. Wicklund and Brehm (1976) noted that certain variables could influence the threshold of dissonance, the amount of perceived dissonance, and the kind of strategy chosen for dissonance reduction (i.e., commitment, choice certainty, self expectancy, attention, etc).

Perhaps more importantly are the cultural differences between the two populations (American individuals vs. Kuwaiti individuals) might be an effective factor. An aspect of “cultural boundness” to cognitive process was suggested by many studies (Derry, 1996; Pribram, 1971). The cultural knowledge and social experience the
individual carries provide the interpretive frames that guide his or her reasoning and problem-solving processes. The more entrenched a belief, value, or social role, the more difficulties it is for the individual to change that schema, even when new and convincing corrective information is provided (Arce, 1999). Furthermore, considerable cross-cultural research shows that consistency is less valued and emphasizes in collectivist cultures than in individualist cultures. For example, Heine and Lehman (1997), using a free choice paradigm, found that Japanese students showed much less dissonance reduction (through the rationalization of decisions) than did the North American participants. The more collective culture of Kuwait, compared to the more individualistic culture of the USA, may therefore be another source for discrepancies in the findings.

As was argued by the theory of cognitive reactions (Beike & Landoll, 2000), no direct effects of memory recall valence (pleasant vs. unpleasant) was observed on well-being in the present findings. However, unlike higher depressed group, the reference and mild group seemed to recall more positive memories from their past compared to the higher depressed group. This is consistent with the overall trend in the research that pleasant events are recalled slightly better than unpleasant events (Bower & Gilligan, 1979; Brewer, 1988a; Holmes, 1970, Robinson, 1980; Thompson, Skoweonski, Larsen & Betz, 1996; Wagenaar, 1986).

The evaluative attitude to the past period as a whole tends to be more positive in severely depressed group compared to the reference and moderately depressed group.
People may bias their recall of past attitudes and behaviour in a manner that increases their consistency with their current attitudes (McFarland & Ross, 1987; Ross & Conway, 1986). However, depressed individuals need to confirm their current depressed mood. They may do this by comparing their poor present life with their “exciting” past life. On another hand, they may employ this strategy to verify their feelings of guilt and hopelessness to themselves and to others. It could be a form of defensive strategy that depressed individuals apply to maintain their current depressive status. Such a strategy would be detrimental to recovery. Memory recall valence and the view of the past lifetime were linked: the more unpleasant memories recalled, the more positive the past lifetime view. From the above earlier findings, this effect may possibly relate to the severely depressed group who were found to recall more unpleasant memories compared to the other depression groups.

4.5 Summary

Like justification, outweighing, as a method of reducing discomfort and restoring consistency appears to be unsuccessful with depressed individuals. They showed more outweighing processes after positive memories than negative ones. They seemed to prefer to recall information that is conceptually congruent with their mood and self-concept. Their negative mood state appears to influence their outweighing process, recall of specific memories, and beliefs about the past. Thus, their reactions to memories do not restore consistency and their well-being satisfaction remains accordingly low.
Chapter 5 Depression and the Mediating Role of Closure

5.1 Introduction

Festinger (1957) assumed that any discrepancy between relevant information and knowledge of one's own behaviour would motivate the individual to reduce this negative affective state, which Festinger labelled "dissonance". According to Festinger (1957), when the degree of dissonance is high enough to motivate action, individuals will use one of three methods of dissonance reduction. The first method consists of changing one of the inconsistent elements, that is, simply changing an attitude, value, behaviour, or opinion with behaviour typically being the most resistant to change. The second method of dissonance reduction consists of adding consonant cognitions that reduce the overall level of inconsistency and include active attempts to seek out new information.

The third method suggested by Festinger (1957) is "decreasing the importance of the elements involved in the dissonance relations" (p. 264). Thus, rather than adding new cognitions, a basic characteristic of one or more of the relevant cognitive elements is changed. Specifically, the purpose of this method is not to reduce the level of inconsistency, but merely to reduce the importance of the inconsistency by reducing the importance of one or more of the dissonant element. Recently, Beike and Landoll (2000) in their model of Cognitive Reactions to Autobiographical Memory (CRM), refers to this mode of dissonance reduction as Closure. In popular usage, gaining
“closure” on an experience indicates being able to put it behind oneself and stop thinking about it. Gaining event closure is an alternative way of dealing with inconsistent recall, analogous to trivialization in the dissonance literature. In the autobiographical memory system, closure allows an inconsistency to remain, but not to cause negative mood states, therefore restoring well-being. Despite the enormous and diverse number of dissonance studies, the great majority of them have focused on attitude change as the mode of dissonance reduction (for reviews, see Cooper & Fazio, 1984; Wicklund & Brehm, 1976) and also examine the adding of consonant cognitions via selective search for and exposure to new information (for a review, see Frey, 1986). Unfortunately, the third method of dissonance reduction posited by Festinger (1975), trivialization or Closure, has been nearly forgotten (Simon, Greenberg & Brehm, 1995).

Lately, Beike and Landoll (2000) demonstrate this method of dissonance reduction, closure, among university student where they directed them to recall three memories from a specific period of their life (pleasant or unpleasant) and then asked to rate the degree of closure they had on each event using a 10-point scale (closure reaction). The 10-point scale ranged from “complete lack of closure” through to “a good deal of closure”. Well-being and past lifetime period evaluation were then measured. Beike and Landoll (2000) demonstrated that closure reaction was associated with higher well-being only after inconsistent reaction. Furthermore, they found that more consistency-restoring cognitive reactions occurred after unpleasant compared to pleasant event recall. However, no studies were found to demonstrate this kind of dissonance reaction in depression.
Thus, the aim of the present study was to adopt a similar model (CRM) of Beike and Landoll (2000) but to examine the closure among clinical depressed population. In Experiment 1 and 2, two types of cognitive reactions proposed by Beike and Landoll (2000) were investigated: internal justification and outweighing. The depressed participants in both studies revealed dysfunctional cognitive reactions to their recalled memories. Particularly, they were more likely to show internal justification (internal attribution) to their unpleasant memories, and to produce a greater proportion of inconsistent “outweighing” memories when recalling pleasant events. Furthermore, cognitive reactions found to have no impact on well-being after inconsistent recall as was predicted by Beike and Landoll (2000).

Pyszczynski and Greenberg (1987, 1992) have recently proposed a self-regulatory preservation theory of the development and maintenance of depression. They proposed that when an individual loses a central source of self-worth (e.g., spouse or job), they enter a self-regulatory cycle to regain what was lost. This cycle involves intense self-monitoring and self-evaluation directed toward developing a productive course of action. Pyszczynski and Greenberg (1987) suggested that this type of self-focus will lead to intensified negative affect, self-criticism, self-blame, a negative self-image, and the adoption of a unique depressive self-focusing style in which the person engages in high levels of self-focus after negative outcomes and low self-focus after positive outcomes. Furthermore, they suggested that this depressive self-focusing style might account for the lack of self-serving attributional bias among the depressed.
Thus, based on the above reasoning, and the findings from the first and second experiments, it was hypothesized that depressed patients would lack the ability to engage in closure reaction as a way of resolving recall inconsistency. Specifically, it is expected that depressed patients will engaged in more closure when their memories are pleasant rather than unpleasant. Furthermore, there will be no moderating role of this closure reaction on well-being satisfaction after inconsistent recall.

5.2 Method

5.2.1 Participants

Depressed patients: Ninety-three Kuwaiti depressed psychiatric inpatient and outpatient of Kuwait psychiatric general hospital aged 20-54 took part. According to the hospital’s clinical team, and the structured clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon & Williams, 1995), these patients met Research Diagnostic Criteria (Spitzer, Endicott & Robins, 1978) for primary definite major depressive disorder and had no other major psychiatric diagnosis (e.g., schizophrenia, alcoholism, eating disorder, obsessive-compulsive neurosis) or major physical illness. Fifty-two patients were diagnosed with recurrent depression within the past two years and 41 patients with first episode of depression.

Reference group: Sixty-one Kuwaiti participants, aged 20-54 were recruited from Kuwait psychiatric hospital who were their as visitors or working their as clinician as well as students from Kuwait telecommunication institute and technology and nursing
institute, voluntarily participated and served as a non-depressed comparison group. Seven participants were removed for not completing their questionnaire leaving only 54 participants.

Ethical approval was gained from the local psychiatric hospital (see Chapter 2) and all participants gave verbal informed consent. The participants in the depressed and non-depressed group were recruited to be similar in their age and gender distribution. Educational levels were equated by ensuring that all participants had spent less than 3-years at college. Both patient and control participants were recruited on the basis of opportunity rather than on any systematic selection procedure. The sample therefore represents a convenience rather than a random sample.

5.2.2 Measures

After obtaining informed consent and completing the Beck Depression Inventory by the participants, the same experimental booklet to that used in Experiment 1 and 2 was given, but with one exception: after providing the three memories, participants were given a 10-point scale for each event that the participant will describe, labelled with end points “Complete lack of closure” (1) and “Complete good deal of closure” (10). The closure scores were calculated in a similar manner to that of Beike and Landoll (2000) by computing the mean of the three closure ratings. The higher scores indicated greater closure. Then, a measure of well-being, the 5-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) was given, followed by a measure of the evaluation of the past lifetime period, a 10 of 7-point
semantic differential items, a subset of the 19 items in the Time Attitude Scale (TAS; Nuttin & Lens, 1985). As in Experiments 1 and 2, an analysis of the internal reliability (Cronbach’s alpha) of the three scales used was undertaken. This showed that the three measures had high reliability coefficients: Closure Reaction Scale (.81), Time Attitude Scale (0.96), and Satisfaction With Life measure (0.89).

5.2.3 Design and Procedure

The order of the measures and the procedure were the same as in Experiment 1 and 2 with the following changes:

Following the recall task, the meaning of closure was verbally explained to the participant with clear examples (e.g., my graduation day was misery, but it is far behind me, I understand and accept it, and it just does not matter today). The participants were asked to rate the degree of closure they had on each event using a 10-point scale (closure reaction). The three scales (one for each recall) were on a separate page, and participants could refer back to the recalled memory if necessary. The 10-point scale ranged from “complete lack of closure” through to “a good deal of closure”. Well-being and past lifetime period evaluation were measured then. A final sheet of the booklet asked the participants to indicate their gender, and allowed them to express any concerns or complaints about the experiment. As in the previous studies, the design was an independent sample ANOVA. The independent variables are the recall consistency (consistent vs. inconsistent) and the classification of the mood states based on BDI scores as non-depressed (BDI < 10), mild (BDI 10 – 16),
moderate (17 – 29), and severe depressed (BDI 30 – 63) individuals. The dependent variables are closure, subjective well-being, and the view of the past lifetime. Given the importance of memory recall valence (pleasant vs. unpleasant) in the earlier studies, this was again investigated in here.

5.3 Results

Table 5.1 shows the basic demographics for the study population. A single factor independent ANOVA showed that the four groups did not differ in age (F < 1) and did not differ in their distribution of males/females (χ(3) = 6.41, p = .093).

Table 5.1. Demographic characteristics of the four depression groups.

<table>
<thead>
<tr>
<th></th>
<th>BDI score</th>
<th>Age (years)</th>
<th>%</th>
<th>NPER</th>
<th>TPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Depressed (n=54)</td>
<td>4.43</td>
<td>32.7</td>
<td>54%</td>
<td>2.15</td>
<td>.50</td>
</tr>
<tr>
<td>Mild Depression (n=18)</td>
<td>11.06</td>
<td>32.6</td>
<td>44%</td>
<td>1.94</td>
<td>.67</td>
</tr>
<tr>
<td>Moderate Depression (n=21)</td>
<td>26.00</td>
<td>31.1</td>
<td>24%</td>
<td>1.48</td>
<td>.52</td>
</tr>
<tr>
<td>Severe Depression (n=54)</td>
<td>36.65</td>
<td>33.0</td>
<td>54%</td>
<td>0.61</td>
<td>.63</td>
</tr>
</tbody>
</table>

1 Time Period Evaluation, proportion of participants selecting positive time periods

2 Number of Pleasant Events Recalled (max = 3) from the TPE selected
Table 5.2: Mean score for closure, well-being, and the past-time attitude as a function of depression groups and recall consistency

<table>
<thead>
<tr>
<th>Recall Consistency</th>
<th>Depression Group</th>
<th>N =</th>
<th>Closure</th>
<th>Well-being</th>
<th>PTA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent</td>
<td>Reference</td>
<td>24</td>
<td>2.87</td>
<td>4.30</td>
<td>4.71</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>9</td>
<td>3.26</td>
<td>4.37</td>
<td>4.70</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>9</td>
<td>1.78</td>
<td>1.53</td>
<td>3.77</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>13</td>
<td>1.55</td>
<td>1.68</td>
<td>3.27</td>
</tr>
<tr>
<td>Inconsistent</td>
<td>Reference</td>
<td>30</td>
<td>2.78</td>
<td>3.83</td>
<td>3.38</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
<td>9</td>
<td>3.68</td>
<td>4.37</td>
<td>3.90</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>12</td>
<td>1.94</td>
<td>1.98</td>
<td>3.71</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>41</td>
<td>1.78</td>
<td>1.81</td>
<td>4.15</td>
</tr>
</tbody>
</table>

Thus, the four groups were well balanced on these variables. Analysis of the differences between the four groups on PTA showed that the number of positive events recalled did not differ as a function of depression (F < 1). However, the more depressed groups recalled fewer pleasant memories ((F(3,143) = 24.1, p < .001). Post-hoc analysis showed that the reference and mild depression groups recalled equivalent numbers of pleasant memories. The moderate group recalled fewer pleasant memories than the reference group (p = .04), but an equivalent number to the
mild group. The severely depressed group recalled fewer pleasant memories than all the other groups (all $p < .01$). Thus, although the four depression groups do not differ in the valence of the time period they chose to recall from, nevertheless the more depressed groups recall fewer positive memories from those time periods.

The findings are presented in the following three main sections, each one concerned with one of the three dependent variables: Closure Reaction Scale, Subjective Well-being Measure, and the Past Time Attitude Scale. The mean values on each of the three dependent measures are shown in Table 5.2.

### 5.3.1 Closure Reaction

To determine whether closure was more likely following the retrieval of lifetime-period consistent events (consistent recall) than after inconsistent recall, a two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the average of the closure reaction for the memories recalled. The analysis showed a main effect of depression group ($F(3,139) = 36.90$, $p < .001$). The effect of recall consistency and the depression group x recall consistency interaction did not approach significance (all $F < 1$).

Figure 5.1 showed the main effect of depression. Post-hoc analysis, using the Tukey test ($MSE = 0.535$; critical difference @ 5% is 0.445 and @ 1% is 0.543), showed that the only scores that did not differ were between the moderate and severe groups.
Thus, closure was higher in the mild group, compared to the reference group (p < .01), and was lower in the moderate and severe groups (all p < .01). In summary, the mild group showed more closure than the reference group, but higher levels of depression led to less closure. As shown in Figure 5.1, recall consistency did not modify this pattern.

![Figure 5.1. Closure as a function of depression group and recall consistency.](image)

**Memory Recall Valence.** To investigate the impact of recall valence (pleasant vs. unpleasant) on closure, a two-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant), depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on closure scores. As before, the analysis revealed a main effect of depression group (F (3,139) = 35.43,
p < .001). However, while there was no effect of memory recall valence (F < 1), the depression group x memory recall valence interaction (F(3,208) = 10.78, p < .001) was significant.

Figure 5.2. The influence of memory recall valence on closure scores as a function of depression group.

Figure 5.2 shows the form of the depression group x memory recall valence interaction. Post-hoc analysis, using the Tukey test (MSE = 0.444, critical difference @ 5% is 0.685 and @ 1% is 0.804), showed the following effects. The reference group showed more closure on unpleasant memories (p < .01), the mild group showed no difference, and both the moderate (p < .01) and severe (p < .05) groups
showed more closure on pleasant memories. The overall levels of closure are similar to that reported in the recall consistency analysis, except that the difference between the reference and mild groups is only present for the pleasant memories.

In conclusion, in the analysis of memory consistency, the reference and mildly depressed groups engaged in more closure cognitions than the moderate and severe depressed groups. The mild group also engaged in generally more closure than the reference group. This pattern did not vary with the consistency of the recalled memory with evaluation of the time period from which the memory was retrieved. However, this general pattern was influenced by the valence of the recalled memory. Specifically, the reference group showed higher level of closure cognition for the unpleasant memories compared to the pleasant memories. In contrast, moderately and severely depressed group showed higher level of closure cognition with pleasant memories than unpleasant memories recalled. The mild group does not differ in the degree of closure for pleasant and unpleasant memories.

5.3.2 Well-Being

An equivalent two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the two factors, was conducted on the average score on the well-being scale. The analysis showed a main effect of depression group \( (F(3, 139) = 57.14, \ p < .001) \). No effect of recall consistency on well-being \( (F < 1) \), and no
depression group x recall consistency interaction $F(3, 139) = 1.30, p = .27$). Post-hoc analysis, using the Tukey test (MSE = 1.062, critical difference @ 5% is 0.627 and @ 1% is 0.764), showed equivalent scores for the reference (4.15) and mild (4.37) groups, and equivalent scores for the moderate (1.75) and severe (1.76) groups. As groups, the reference-mild group differed from the moderate-severe groups ($p < .01$). Thus, well-being is substantially lower in the higher depressed groups compared to the reference and mildly depressed groups. Furthermore, those who recalled memories consistent with the lifetime period do not differ in their levels of well-being from those who recalled memories inconsistent with that lifetime period.

In their study, Beike and Landoll (2000) predicted that closure cognition has a moderating role on well-being only for inconsistent recall. Particularly, it is argued that those who engage in closure for inconsistent recall would put those events behind them and this would lead to increased well-being due to the memory's lower salience or importance to the individual. Thus, it is necessary to examine the influence of recall consistency on well-being for those who engaged in different degrees of closure. A further analysis was therefore conducted by classifying participants into low vs. high closure groups based on a median split. Participants with closure scores of 2.00 and less were classified as the low and those with scores more than 2.00 were classified as the high group. Originally, a three-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent), closure group (low vs. high), and depression group as the three factors, was intended to be conducted on the average score on the well-being scale. However, including all three factors lead to an
incomplete experimental design. Specifically, there were no participants who were high in closure, who recalled inconsistent memories, and who had moderate or severe depression. Given the current interest in these processes within a depressed sample, the analysis was conducted with only two depression groups: reference vs. depressed (i.e., mild, moderate, and severe groups combined). This showed a main effects of depression group (F(1, 139) = 27.38, p < .001), recall consistency (F(1, 139) = 7.39, p = .007), and closure (F(1, 139) = 13.39, p < .001). In addition, both the depression group x closure group (F(1, 139) = 30.25, p < .001) and recall consistency x closure group (F(1, 139) = 9.42, p = .003) interactions were significant. However, neither the depression group x recall consistency nor depression group x recall consistency x closure group interactions approached significance (both F < 1).

The form of depression group x closure group is illustrated in Figure 5.3. Post-hoc analysis, using the Tukey test (MSE = 1.264, critical difference @ 5% is 0.673 and @ 1% is 0.816) was conducted. The analysis showed that well-being score was high for both depressed and non-depressed (3.87 vs. 3.82) groups who engaged in a high level of closure. However, for those who engaged in low closure processes, well-being score was higher for the non-depressed group (4.22) compared to the depressed group (1.88, p < .01). Thus, well-being score was high in non-depressed group for those who engaged in high and those who engaged in low closure cognitions. While with depressed group, it was only high for those who engaged in high closure cognitions.
Figure 5.3. The influence of closure on well-being as a function of depression group.

Post-hoc analysis, using the Tukey test (MSE = 1.264, critical difference @ 5% is 0.673 and @ 1% is 0.816), found the following effects. For those who engaged in low closure cognition, well-being score was not different for the consistent (3.01) and inconsistent (3.08) recalled memories. However, for those who engaged in high closure cogitation, well-being was higher for the consistent recalled memories compared to the inconsistent. Thus, high closure processes seemed to enhance well-being when it was applied within the consistent recalled memories, while it does not seem to affect well-being when it was applied within the inconsistent recalled memories.
In conclusion, as expected, well-being tends to be lower in the depressed group than the non-depression group. But when the depressed group engaged in high closure cognitions, their well-being seemed to increase. In contrast, the well-being score for the non-depressed group was high regardless the levels of closure (low vs. high) they engaged in. Unexpectedly, for all participants, well-being showed to increase when high closure cognition was addressed to the consistent memories recalled rather than the inconsistent memories. When the memories were inconsistent, well-being seemed to reach same level for the low and high closure group. The well-being score did not differ significantly within low closure group regardless their memories consistencies.
Memory Recall Valence. According to Beike and Landoll (2000), the evaluative content of memories (pleasant vs. unpleasant) has no direct impact on well-being. Rather, they argue that it is the consistency of the memory’s content with the view of the lifetime period that determines well-being. To investigate this, a three-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant), closure group (high closure vs. low closure) and the depression group (depressed vs. non-depressed) as the three factors, was conducted on well-being scores. As was found earlier, the analysis revealed a main effect of depression group (F(1,139) = 18.67, p< .001), closure (F(1,139) = 6.23, p= .014) and a closure group x depression group (F(1,139) = 9.71, p= .002) interaction. No effects of memory recall valence (F < 1) was found and no other interactions approached significance. These findings are the same as those reported in the recall consistency analysis.

In conclusion depressed group has lower well-being scores than the non-depressed group. No support was found for the prediction of Beike and Landoll (2000) that closure cognition maintains well-being only after inconsistent reaction. Nor an impact of memory recall valance on well being scores was found as a function of depression. Figure 5.5 illustrates the lack of influence of memory recall valence on well-being.
Figure 5.5. The influence of memory recall valence on well-being as a function of depression group

5.3.3 Past Time Attitude

A two-factor independent sample ANOVA, with recall consistency (consistent vs. inconsistent) and depression groups (reference vs. mild vs. moderate vs. severe) as the two factors, was conducted on the average scores from the Past Time Attitude scale. Higher scores on this scale indicate that participants had a more positive attitude to their past life. No main effect was found for either depression group (F(3,139) = 1.19, p = 0.314) or the recall consistency (F(3,139) = 1.43, p = .234). However, the recall consistency x depression group interaction was highly significant (F(3,139) = 6.39, p <.001).
Post-hoc analysis, using the Tukey test (MSE = 1.76, critical difference = 1.365 @ 5% and 1.603 @ 1%) was conducted (see Figure 5.6). For consistent recall, the reference (4.71) and mild (4.70) group did not differ, but together showed a more positive attitude to their past compared to the severely depressed group (3.18, both p < .05). The score for the moderately depressed group (3.68) was intermediate between the mild and severely depressed, and did not differ significantly from either. For inconsistent recall, none of the differences between groups were significant. Comparing consistent and inconsistent recall, only the reference group show a more positive attitude to their past when recalling consistent memories compared to inconsistent memories (4.71 vs. 3.29, p < .05).

*Figure 5.6. The influence of recall consistency on the “Past Time Attitude” as the function of depression group*
In summary, when the memories recalled were consistent with the time period they came from, the reference and mild depressed group tend to have more positive attitude to their past compared to the severely depressed group. However, no significant differences were found between the four groups when the memories recalled were inconsistent.

**Memory Recall Valence.** Finally, the impact of memory valence on the past time attitude was also examined using a two-factor independent sample ANOVA, with memory recall valence (pleasant vs. unpleasant) and depression groups (reference vs. mild vs. moderate vs. severe depressed) as the factors. The analysis showed a marginal main effect of depression ($F(3, 139) = 2.37, p = .073$), and a main effect of memory recall valence ($F(1,139) = 4.90, p = .028$). Furthermore, the interaction between depression groups and memory recall valence ($F(3,139) = 2.73, p = .046$) was of borderline significance.

The form of depression groups x memory recall valence interaction is shown in Figure 5.7. Post-hoc analysis, using the Tukey test ($\text{MSE} = 1.827$; critical difference @ 5% is 1.386 and @ 1% is 1.628), showed the following effects. There were no differences between the reference, mild and moderate groups for either pleasant or unpleasant memories. However, the severe group shows a more positive attitude to their past life when they recalled unpleasant compared to pleasant memories ($p < .01$). For this group, only the scores for the pleasant memories tended to be lower than the other groups ($p \geq .05$). Thus, the severely depressed group tend to evaluate
their past life time more positively when they recall unpleasant events, whereas the other three groups (reference, mild, and moderate) evaluated their past life independent of valence of the recalled memories.

![Graph showing the influence of memory recall valence on the past time attitude as a function of depression group.](image)

*Figure 5.7. The influence of memory recall valence on the past time attitude as the function of depression group*

### 5.4 Discussion

Common to the theoretical models of congruity (Osgood & Tannenbaum, 1955), dissonance (Fistinger, 1957) and self-verification (Swann & Read, 1981a, 1981b), is the assertion that attitude, beliefs, and information tend to be organized into psychologically consistent sets. This state of affairs is assumed to be the result of
pressures generated by the occurrence of inconsistencies, which in their turn depend upon the contiguous appearance of potentially conflicting cognitive items. When actions conflict with beliefs, psychological discomfort arises and motivates the restoration of consistency (Croyle & Cooper, 1983; Elliot & Devine, 1994). One way to reduce dissonance is to trivialize the dimension as unimportant to the belief system on which inconsistency is found (Simon et al., 1995). Whereas both dissonance and self-verification theory hypothesize a basic consistency striving rather than striving to think positively of the self per se, Beike and Landoll (2000) recently demonstrated that a similar striving for consistency occurs when a person strives for a consistent life story in spite of occasional information to the contrary. They predicted that when a person remembers an event that does not fit with their life story, this poses a threat to the consistency of their life story and similar consistency resolution process are engaged. In addition, Beike and Landoll (2000) proposed that appropriate cognitive reactions occur during the process of inconsistent event recall that protects well-being. In the absence of these processes, a reduction in well-being occurs. One important implication of this theory is that the valence of memories (pleasant vs. unpleasant) and cognitive reactions has no direct impact on well-being. Rather, it is the consistency of the memory's content with the view of the lifetime period that determines well-being.

Unlike the study of Beike and Landoll (2000), which was conducted with university students, the present research was interested in examining the implications of this model within a sample of clinically depressed patients. The first two experiments
investigated two types of cognitive reaction to memories. The first process was the degree that external attribution was used as a means of “providing justification for the inconsistency”. The second process was that of outweighing. Here the person resolves the inconsistency by recalling “additional specific events that oppose those previously recalled”. The aim of the present study was to extend the range of cognitive reactions studied to include that of closure, which involves “putting the events behind one-self”. Beike and Landoll (2000) have argued that stopping thinking about the events that arouse dissonance is an alternative way to preserve well-being and to maintain consistency of self-concept belief system. In the autobiographical memory system, closure allows inconsistency to remain but to recede from attention, therefore protecting well-being. Based on the findings reported earlier, and the nature of mood congruency in depression, it was hypothesized that depressed people would use closure reactions but more toward closing up the pleasant memories and keeping the unpleasant memories around. Thus it was expected that, rather than recall consistency, it is the valence of the memory recalled that impacts on well-being for people suffering from depression. A similar methodology and procedure to that of Bieke and Landoll (2000) was used to explore this.

Consistent with the previous experiments, as well as Bieke and Landoll’s (2000) findings, the mere presence of inconsistent recall did not motivate closure. In fact, there was no impact of recall consistency on the closure process. However, the findings revealed more engagement in closure cognitions within the reference and
mildly depressed group compared to the moderately and severely depressed group. It seemed that the high depressed group showed less ability to put events behind them. Consistent with Bieke and Landoll findings, the closure process for the reference group was more toward unpleasant memories as a form of hedonic or self-serving bias (e.g., Kunda, 1990). In sharp contrast, as was expected, the severely depressed participants showed more preference towards closing up, and putting behind, pleasant compared to unpleasant experiences. Research on self-serving attributional bias is consistent with this result and has consistently demonstrated that people take more credit for successful outcomes than for failed outcomes (Zuckerman, 1979). Thus, people are more likely to make self-attributions for positive than negative outcomes. However, the reduced capacity for pleasure “anhedonia” is a common experience in depression (Snaith, 1993). Depressed people seem to have a reduced ability to deal with their painful and stressful memories appropriately (see Experiment 1) and tend to take the blame for bad outcomes while denying credit for good outcomes. Their negative attributional style helps them to enhance their negative current mood and protect their worthless self-concept. Guided by this explanation, and the depressive self-focusing style discussed earlier in the introduction, it would be expected that the depressed patients would be more likely to get over (close) their pleasant experiences because they attribute them to external factors and therefore there is no attempt to give them special attention or thought. In contrast, they tend to accept that they live with unpleasant events by attributing them to themselves (internal attribution) rather than others (external attribution), and they therefore show less closure to them.
As Beike and Landoll’s (200) findings, along with the present study, shows that normal individuals were using closure reaction more toward unpleasant recalled memories, it is important here to consider the potential criticism of using closure with positive memories. According to Beike and Landoll (2000), if a person recalled a pleasant event from the unpleasant time period the event occurred in, a discomfort feeling will arise and an appropriate cognitive reaction might involve them resolving dissonance. As was mentioned before, the concept of closure is based around “decreasing the importance of the elements involved in the dissonance relations” (Festinger, p.264). The issue here is that if trivialization “closure” was used to reduce dissonance, then the individual would have to trivialize the positive event recalled that was inconsistent with the belief about the unpleasant period that the event came from. However, given the viability of the trivialization alternative and the fact that self-affirmation research represents the primary evidence supporting the importance of self-concept and self-image view of dissonance (Aronson, 1969; Steele, 1988) over the original theory (Festinger, 1957), it is important to be more cautious in treating closure as a potential type of reaction to resolve inconsistency, especially when the source of the inconsistency is a positive or pleasant memory.

Before considering the findings of closure group (low vs. high) on well-being, it is important to recall that when participants were classified into closure groups, none of the moderately and severely depressed patients who were high in closure recalled inconsistent memories. Given the main impact of depression on well-being occurred between the mild and moderate groups, three options for handling the analysis of
closure cognitions on well-being were considered. The first was to control for the effects of depression on well-being (i.e., covariate analysis) and then only consider the impact of recall consistency and closure groups on well-being. This option was not followed because the focus of the study was on the different cognitive reactions that might accompany depression. Such an analysis would not allow this to be investigated. The second option was to create a low (reference and mild) and a high (moderate and severe) depression group on the basis that within each group well-being scores were equivalent. However, this option does not eliminate the original problem – that of no inconsistent recall for high depressed patients with high closure scores. The option adopted was to simply classify participants into a non-depressed (reference) and a depressed (mild, moderate, severe) group. However, when using this option it was important to remember that the depressed high closure/inconsistent recall group comprised only mildly depressed patients and would need special consideration should the three-way interaction be significant. However, the analysis showed that closure group (low vs. high) only impacted on recall consistency or depression, but not both together.

Consistent with the findings of Experiment 1 and 2, closing events that are inconsistent with the lifetime period was not linked with elevated well-being as predicted by Beike and Landoll (2000). Instead, well-being was higher when closure cognitions addressed the consistent, rather than the inconsistent, events recalled (see Figure 5.4). Furthermore, this influence of recall consistency was not influenced by depression status. Thus, there was no support for Beike and Landoll’s (2000)
prediction that closure cognitions would alleviate well-being only after inconsistent recall. However, it is important to note differences in the methodology used to generate memories from the designated time period. Beike and Landoll (2000) explicitly directed participants to recall either pleasant or unpleasant memories, while the present study allowed participants to freely recall either pleasant or unpleasant memories. Thus, unlike Beike and Landoll (2000), there was no direct manipulation for the memory recall valence. That led to the finding that depressed patients were mostly prone to recall negative experiences while the reference participants were more likely to recall positive experiences. Thus the importance of resolving cognitive inconsistencies may be trivialized by the major effect of that link between the cognitive reactions and memory recall valence. Furthermore, as was mentioned in the earlier experiments, the individuals and cultural differences between the population of Beike and Landoll (2000) and the present study needs to be taken in account. For example, societies differ in the emphasis they place on certain values and resources, so it seems likely that the life satisfaction levels of members in various societies are influenced to different degrees by various predictors of life satisfaction (Kang, Shaver, Sue, Min & Jing, 2003). In their review, Thibodeau and Aronson (1992) proposed that people hold self-expectancies for competent and moral behaviour that they derive from the “conventional morals and prevailing values of society” (p. 592). Self-consistency theory assumes that when people use their self-expectancies “personal standards” for interpreting a discrepant act, they activate self-knowledge and use it to make sense of their behaviour. But because the self-knowledge structure of people with high versus low self-esteem is different, the use
of self-expectancies to assess behaviour brings to mind different criteria for interpreting and evaluating action. As a result, people with high self-esteem perceive a greater discrepancy than people with low self-esteem, causing self-esteem differences in the arousal of dissonance (Stone & Cooper, 2003).

The other main finding from the analysis of well-being and closure group was related to depression status. This showed the expected finding that closure group had no impact on well being for the non-depressed group, but in the depressed group high levels of closure were associated with higher well-being (see Figure 5.3). Unsurprisingly, the well-being level was substantially higher within the non-depressed group. However, depressed people showed an improvement in their well-being when they engaged in a high level of closure cognitions. Memory recall valence appeared to have no direct impact on well-being as was predicted by Beike and Landoll (2000). However, it showed an effect on the general view of their past (i.e., past time attitude).

Within the four depression groups (reference vs. mild vs. moderate vs. severe), the general evaluative attitude to the past tends to be positive. However, compared to the severely depressed individuals, the reference and mildly depressed group have a more positive attitude to the past when the memories they recalled were consistent with the time period that the memories come from. Interestingly, severely depressed individuals showed a more positive attitude toward the past life when they recalled unpleasant memories, but this was not the case for those with lower levels of
depression (i.e., reference, mild, and moderate depressed groups). One possible interpretation of this is related to what Klinger (1975) has called the “current concern”. This concept is defined in terms of a person’s needs, values, with so on, and incentives in the environment. Current concerns can guide both thought and behaviour. As discussed earlier, the depressed patients may need to enhance their negative self-evaluation and feelings of helplessness and worthlessness. Accordingly, a comparison between their good past life and their bad present one, together with their negative attributional style (i.e., NAS), enhances their negative mood state and this acts to “protect” them against cognitive reactions that might restore well-being (e.g., closure) and therefore maintains their low levels of well-being.

5.5 Summary

The use of closure as a method of restoring well-being was found to be employed less by the highly depressed patients. Within the depressed groups, mood congruent recall (e.g., negative mood – recall of unpleasant events) was found to have an impact on the use of closure. Interestingly, it was found that depressed patients showed greater use of closure after recalling pleasant experiences. The idea that this derives from the focus of their attention being on negative events, together with their general negative attributional style, is an interpretation that deserves further investigation. Thus, it appears that individuals in a good mood are more likely to recall positive memories whereas individuals in a bad mood are more likely to recall negative memories. Thinking about one’s life while being in a bad mood may result in a
selective retrieval of negative aspects of one’s life, and, therefore, in a more negative evaluation. Finally, for the severely depressed patients, this influence of current mood seems such that their evaluation of their past life is seen in a more positive manner.
6.1 Introduction

Cognitive dissonance theory (Festinger, 1957) and self-verification theory (Swann & Read, 1981a, 1981b) asserted that when actions conflict with beliefs, psychological distress arises and motivates individual to restore consistency (Croyle & Cooper, 1983; Elliot & Devine, 1994). According to the model of cognitive reactions to autobiographical memory (Beike & Landoll 2000), when an event memory that threatens the integrity of the life story is brought to mind, cognitions that explain away inconsistency may be added: “The only reason my graduation day was sad because my father was not their to share me my day.” This type of reaction, explaining away the inconsistency with an external attribution, is called justification. This method of resolving inconsistency was examined in Experiment 1 within clinical depressed populations and the findings emphasize the association between internal justification and Negative Casual Attributional Style (NAS) in depression. Casual attributions may be internal (we attribute the event’s causation to dispositional factors within our selves) or external (the event is caused by dispositional factors within another person or situational factors). Accumulating evidence has found attribution biases in normal people, a phenomena called the self-serving attributional bias (Miller & Ross, 1975; Fletcher & Ward, 1988) were people tend to take credit for success (internal attribution of positive events: the “self-enhancing” bias) and to deny responsibility for failure (external attribution for negative events: the “self-protective” bias). However, depressed people have been found to make excessively
internal attributions for negative events (Abramson et al., 1978). Proponents of the reformulated learned helplessness theory (Abramson et al., 1978) argue that one of the key cognitive factors involved in depression is attributional style, which can be defined as how a person tends to explain the causes of positive and negative events. Research on attributional style showed that maladaptive attributional style for good or bad events was associated with poor physical health (Peterson & Seligman, 1987), and depression (Sweeney et al., 1986). Sweeney et al. (1986) conclude that a maladaptive style for bad events was more strongly related to depression than a maladaptive style for good events. The findings from Experiment 1 showed important differences between depression and helpless attributions as a function of memory valence, but it was suggested that further research was needed to clarify this issue. Thus, one main issue in the present study was to further examine the role that memory recall valence act in the relationship between depression and helplessness attributions. In Experiment 1, participants were allowed to freely recall their memories and thus differences between depression groups might be linked to the kinds of memories they chose to recall, rather than an effect of recall valence. For example, while the choice to recall memories from pleasant versus unpleasant time periods did not differ with depression status, the more depressed patients tended to recall predominantly unpleasant memories. In the present study, participants were asked to recall from both pleasant and unpleasant time periods, and for each time period they were asked to recall one pleasant and one unpleasant memory. Thus, the influence of memory recall valence and recall consistency were directly manipulated in the present study such that all participants provided data under all conditions (see
the design illustrated in Figure 6.1). The question to be addressed in this study is therefore whether the same pattern of negative attribution (more internal attribution for unpleasant memories) would be found within the depressed population when the memory recall valence and recall consistency were directly manipulated rather than being based on the participant’s preference for recalling memories.

The function of autobiographical memory within depressed patients was also an interest in the present study. Autobiographical memory is a term used to describe individuals’ record of their own personal experiences. The term autobiographical memory has been applied to the component of remote memory responsible for personally relevant past memories, but autobiographical memory has itself been further subdivided. Kopelman et al. (1989) divided the autobiographical memory into memory of personal semantic and autobiographical incidents memory. Personal semantic memory refers to factual knowledge about an individual’s own past (e.g., home address, names of teacher/friends/colleagues at work, etc.), while memory of autobiographical incidents refers to their memory of events that happened to them at specific periods of time (e.g., first day at work or college). Retrieval of personal semantic memory may be similar to evoking general semantic memory, while accessing autobiographical incident memory may involve a more active and reconstructive retrieval and recollection process (Baddeley, 1984). Many theorist of how autobiographical memories are encoded and retrieved emphasize their hierarchical aspects (Norman & Bobrow, 1979; Williams & Hollan, 1981; Reiser, Black & Abelson, 1985). According to these theories, a memory is encode as a
combination of descriptions which vary in the level of detail they contain; the more distinctive the memory (e.g., an argument with a friend), the more likely it is to be encoded in specific descriptions (or 'tags') which will distinguish it from other memories (e.g., having lunch with a friend). The ease of retrieving these memories will depend on how many distinctive cues were encoded when the episode occurred. There is evidence that people who are vulnerable to emotional disturbance systematically under-encode distinctive details (Beck et al., 1979).

The recent model of autobiographical memory, developed by Conway and Pleydell-Pearce (2000), suggests that we build associations between autobiographical memories, the self and personal identity. According to this model, autobiographical memories are transitory mental constructions generated from an autobiographical knowledge base. Autobiographical knowledge is held in this base at different level of specificity, the most specified level being that of highly specific single details, such as the sensory and perceptual details of a particular event. The model also suggested that the formation of autobiographical memories is controlled by a set of structured goals, the working self. This term was introduced by Conway and Pleydell-Pearce (2000) to generate a direct connection with the concept of working memory, developed by Baddeley (1986) as a set of control, strategic processes. Through current goals, motivation and desires, the working self-functions as a control process that coordinates and modulates the encoding and the retrieval of autobiographical memories. Specific memories often arise in response to experiences of goal attainment or goal failure. They form what individuals regard as themselves in these
goals and needs. Thus, specific memories express a sense of personal identity that is stable across various lifetime periods.

It is well recognized that depression is characterized by a variety of changes in memory performance. In particular, depressed individuals exercise overgeneral thinking that limits their capacity to interpret events in a realistic manner (Beck et al., 1979). Many researchers have indicated that this cognitive style extends to autobiographical memory retrieval (e.g., Williams & Broadbent, 1986; Williams & Dritschel, 1988, 1992; Williams & Scott, 1988). However, there has been no research focusing on the pattern of semantic memory dysfunction in depression and its temporal gradient (relative sparing of early compared with more recent memory). This is in contrast to recent work suggesting a selective deficit in semantic memory functioning in other functional disorders such as schizophrenia (Duffy & O’Carroll, 1994; Tamlyn et al., 1992) and Alzheimer’s disease (Greene, Hodges & Baddeley, 1995). Thus, the Autobiographical Memory Interview (AMI) was adopted in the present experiment to address the above issues and examine autobiographical memory impairment within a group of depressed patients and examine the pattern across three major life periods (childhood, early adulthood, recent life). Based on previous research (Williams 1996, McNally et al., 1994, 1995), it was hypothesized that depressed patients would demonstrate significant impairment on both personal semantic schedule and autobiographical incidents memory.
6.2 Method

6.2.1 Participants

**Depressed patients:** Forty-three Kuwaiti depressed psychiatric inpatient and outpatient aged 20-54. Informed consent was obtained from all participants. According to the hospital’s clinical team, and the structured clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon & Williams, 1995), these patients met Research Diagnostic Criteria (Spitzer, Endicott & Robins, 1978) for primary definite major depressive disorder and had no other major psychiatric diagnosis (e.g., schizophrenia, alcoholism, eating disorder, obsessive-compulsive neurosis) or major physical illness. Eighteen patients were diagnosed with recurrent depression within the past two years and 25 patients with first episode of depression.
Reference Group: Twenty-eight Kuwaiti participants, aged 20-54 were recruited from Kuwait Psychiatric Hospital. These were visitors, working as clinician, or students from Kuwait telecommunication institute and technology and nursing institute. They voluntarily participated and served as a non-depressed comparison group. Nine participants were removed for not completing some parts of their questionnaire leaving only 19 participants.

The participants in the depressed and non-depressed group were recruited to be similar in their age and gender distribution. Educational levels were equated by ensuring that all participants had spent less than 3-years at college. Both patient and control participants were recruited on the basis of opportunity rather than on any systematic selection procedure. The sample therefore represents a convenience rather than a random sample.

6.2.2 Measures and Procedures

After obtaining informed consent, participants completed the Beck Depression Inventory and then the same experimental booklet used in previous experiments. The first page contained the instructions and participants were asked to work through the booklet at their own pace. The second page asked participants to think of a pleasant time period that they could remember well that occurred at least three years ago. This was to ensure that the period recalled was before the onset of their depression. Participants then directed to recall a total of two memories from this period, one pleasant and the other one unpleasant event. The only restriction on the memory was
that it must have lasted less than one day (i.e., seconds, minutes or hours). If the participant showed signs of struggling to find a specific time period, the experimenter provided them with some pre-defined examples (e.g., their childhood, high school days, teenage period, etc.).

After writing down their two memories, participants were asked again to recall another period of their life that is unpleasant and provide two memories: one pleasant and the other unpleasant. Participants then completed two 12-point causal attribution scales (justification scales) that asked them to rate the degree to which each event have been caused by themselves (internal attribution), or by factors external to themselves (external attribution). Participants completed the two scales for each of the four memories recalled. Finally, they completed the 5-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) to assess well-being and provided an evaluation of the past lifetime period using ten items from Time Attitude Scale (TAS; Nuttin & Lens, 1985).

Finally, the experimental booklet was collected and the Autobiographical Memory Interview was administered. The AMI provides an assessment of a person’s remote memory. It provides a framework in which to assess the intactness/impairment of an autobiographical memory, including the pattern of any deficit and its temporal gradient. The first section, called the personal semantic schedule, requires participants to recall facts from their past life relating to childhood (e.g., names of schools or friends), early adult life (e.g., name of first employer, date and place of
wedding), and more recent facts (e.g., holiday, journeys). Each of these subsections is scored out of 21 points, and the total scores were ranged from: (0-47 sure abnormal), (48-49 probably abnormal), (50-53 border line), and (54-63 acceptable range). The second section, the autobiographical incident schedule, contains items assessing the same three time periods. Scoring is in terms of the descriptive richness of the account of an incident, and its specificity in time and place, and the total scores were ranged from: (0-12 sure abnormal), (13-15 probably abnormal), (16-18 border line), and (19-27 acceptable range). At the start of the interview, participants are told:

'This is an interview in which we are going to ask you questions about your earlier life. The questions will concern your school days, early adult life, and more recent times. If you are ready, then we'll begin.'

The interviewer sits directly facing the participant, at a desk holding the scoring sheet in order to write down the participant’s responses. Then the interviewer started by asking the participant to answer each item in the main three sections of the personal semantic memory schedule and the autobiographical incident schedule with encouragement to elaborate on any information that they have already provided during the course of their response.

As in the previous experiments, analysis of the internal reliability (Cronbach’s alpha) showed that the three scales showed high reliability coefficients: Casual Attribution Scale (0.78), Time Attitude Scale (0.91), and Satisfaction With Life measure (0.98).
6.2.3 Design

Thus the design of the present study included one unrelated sample factor of depression group (reference vs. mild vs. moderate vs. severe) based on scores on the Beck Depression Inventory. For measures of internal justification, two additional related sample factors were used: time period (pleasant vs. unpleasant) and memory recall valence (pleasant vs. unpleasant). The dependent variables were the internal justification scores, well-being and past lifetime attitude. As in earlier studies, the internal justification score is the sum of the internal causal attribution scale and the reversed scored external causal attribution scale.

6.3 Results

Table 6.1 shows the basic demographics for the study population.

Table 6.1. Demographic characteristics of the four depression groups.

<table>
<thead>
<tr>
<th></th>
<th>BDI score</th>
<th>Age (years)</th>
<th>% Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Depressed (n=19)</td>
<td>5.79</td>
<td>32.1</td>
<td>42%</td>
</tr>
<tr>
<td>Mild Depression (n=11)</td>
<td>11.36</td>
<td>31.0</td>
<td>46%</td>
</tr>
<tr>
<td>Moderate Depression (n=9)</td>
<td>25.56</td>
<td>30.4</td>
<td>55%</td>
</tr>
<tr>
<td>Severe Depression (n=23)</td>
<td>33.70</td>
<td>34.0</td>
<td>39%</td>
</tr>
</tbody>
</table>
A single factor independent ANOVA showed that the four groups did not differ in age (F < 1) and did not differ in their distribution of males/females ($\chi(3) = 0.74, p = .863$). Thus, the four groups were well balanced on these variables.

### 6.3.1 Internal Justification

Internal justification scores were analyzed using a three-factor mixed ANOVA, with depression group (reference, mild, moderate, severe) as the unrelated factor and time period (pleasant vs. unpleasant) and memory recall valence (pleasant vs. unpleasant) as the related samples. The analysis showed more internal justification for (a) unpleasant time periods (4.43 vs. 5.19, $F(1,58) = 8.85, p = .004$) and (b) memories with a pleasant valence (5.12 vs. 4.51, $F(1,58) = 6.75, p = .012$), but no main effect of depression groups ($F(3, 58) = 1.18, p = .326$). However, the memory recall valence x depression group interaction ($F(3,58) = 5.92, p = .001$) was highly significant and the memory recall valence x time period interaction was approaching significance ($F(3,58) = 3.05, p = .086$). No other interactions approached significance.

The form of the memory recall valence x depression group interaction is shown in Figure 6.2. Post-hoc analysis, using the Tukey test (MSE = 2.925; critical difference @ 5% is 0.1.37 and @ 1% is 1.62), showed the following effects. The four groups do not differ for unpleasant memories and for pleasant memories the only significant difference was the higher scores for the mild compared to the severe group ($p < .01$). Comparison of pleasant vs. unpleasant memories within groups showed that only the
mild group has higher internal justification scores for the pleasant memories ($p < .01$).

Figure 6.2 The influence of memory recall valence on internal justification as a function of depression group

![Graph showing the influence of memory recall valence on internal justification.](image)

The form of the borderline memory recall valence x period recall valence interaction is shown in Figure 6.3. Post-hoc analysis, using the Tukey test ($MSE = 2.354$; critical difference @ 5% is 0.73 and @ 1% is 0.89), showed no influence of time period on internal attributions for pleasant memories, but more internal attribution for unpleasant memories recalled from the unpleasant time period ($p < .01$). Internal attribution scores did not differ between pleasant and unpleasant memories for the unpleasant time period, but there was more internal attribution for pleasant memories recalled from the pleasant time period ($p < .01$).
Figure 6.3. The influence of memory recall valence on internal justification as a function of time period.

In summary, the four depression groups did not differ in their levels of internal attribution for the unpleasant memories recalled, and for pleasant memories only the mild group showed higher levels of internal attribution compared to all other groups. Thus, the only group where internal justification scores differed as a function of memory recall valence was the mild group, who had higher scores for pleasant compared to unpleasant memories. Furthermore, internal attribution was generally higher when people recalled from unpleasant time periods and for the recall of pleasant memories. There was some evidence that only the recall of unpleasant memories differed as a function of time period (see Figure 6.3).
To examine more directly the impact of recall consistency on internal justification, scores from the four conditions (2 time period's x 2 memory valence) were reclassified into a recall consistency factor. For example, when participants recalled a pleasant memory from a pleasant period of their life, or when they recalled an unpleasant memory from unpleasant period of their life, these scores were averaged together into consistent recall condition. A two-way mixed ANOVA was conducted on the internal justification scores with recall consistency (consistent vs. inconsistent) and depression groups as the factors. Only one effect approached significance, the tendency for internal justification to be higher for consistent recall (4.99 vs. 4.63, F(1,58) = 3.06, p = .086). The main effect of depression group (p = .326) and the depression group x recall consistency interaction (p = .116) were not significance.

6.3.2 Well-being and Past Time Attitude

To investigate the impact of depression on well-being and past time attitude, a one-way ANOVA was conducted with depression group as the factor and well-being and past time attitude as dependent variables (see Table 6.3). The main effect of depression group was significant for both well-being (F(3,58) = 21.6, p < .001) and past-time attitude (F(3,58) = 13.9, p < .001). For well-being, post hoc analysis using the Tukey test (MSE = 1.526, critical difference @ 5% is 0.69 and @ 1% is 0.852) showed that the reference and mild had equivalent scores, and the moderate and severe had equivalent scores (see Table 6.2). However, the reference and mild groups had higher well-being than the moderate and severe groups (all p < .01). For past-time attitude (MSE = 0.715, critical difference @ 5% is 0.40 and @1% = 0.49),
the same pattern was observed: both the reference and mild, and the moderate and severe, do not differ (see Table 6.2). However, the reference and mild groups had a more positive view of their past life compared to the moderate and severe groups (all p < .01).

Table 6.2 Descriptive statistics for well-being, past-time attitude scales and the autobiographical interview (standard deviations in parentheses).

<table>
<thead>
<tr>
<th>Depression Groups</th>
<th>Reference (n = 19)</th>
<th>Mild (n = 11)</th>
<th>Moderate (n = 9)</th>
<th>Severe (n = 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Time Attitude</td>
<td>5.29 (0.70)</td>
<td>5.52 (0.39)</td>
<td>4.11 (1.03)</td>
<td>3.95 (1.02)</td>
</tr>
<tr>
<td>Well-being</td>
<td>5.00 (0.95)</td>
<td>4.73 (1.05)</td>
<td>2.69 (1.72)</td>
<td>2.28 (2.28)</td>
</tr>
<tr>
<td><strong>Autobiographical Memory Interview (Total Score)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schedule a</td>
<td>57.37 (2.65)</td>
<td>53.82 (12.21)</td>
<td>25.56 (12.63)</td>
<td>23.70 (5.20)</td>
</tr>
<tr>
<td>Incidents b</td>
<td>23.16 (2.39)</td>
<td>20.73 (6.56)</td>
<td>10.78 (5.85)</td>
<td>10.74 (1.84)</td>
</tr>
</tbody>
</table>

In conclusion, apparently, the well-being score was higher in the lower depression group (reference vs. mild) than the higher depressed group (moderate vs. severe). However, the lower depressed group showed more positive attitude toward their past compared to the higher depressed group. It is important, nevertheless, to point that the scores of the past time attitude for the moderately (4.11) and severely (3.95)
depressed group tended to be positive overall (above 3.99 considered positive, see chapter 2 for more details).

6.3.3 Autobiographical Memory Interview

To examine the hypothesis that depressed patients tend to adopt over-general thinking (i.e., less detailed and rich memories) when retrieving autobiographical incidents, the data from the Autobiographical Memory Interview (AMI) was analysed. The AMI has two scales that provide information on different kinds of memory: the personal semantic schedule and the autobiographical incidents. In addition, this information is obtained from three time periods: childhood, early adulthood and recent life. The data from each AMI scale was submitted to a two-factor mixed ANOVA with depression group (reference, mild, moderate and severe) as the unrelated factor and time period (childhood, early adulthood, recent life) as the related factor. As the sphericity assumption was violated for the related sample effect for both of these analyses, the Huynh-Feldt correction was used. In reporting these, the original degrees of freedom are retained, but the MSE, F-ratios and p-values use the Huynh-Feldt correction.

For the personal semantic schedule data, the ANOVA showed a main effect of depression ($F(3,58) = 88.3, p < .001$), main effect of time period ($F(2,116) = 141.0, p < .001$) and a significant time period x depression group interaction ($F(6,116) = 3.31, p = .007$). The form of the time period x depression group interaction for the component of personal semantic schedule is shown in Figure 6.4.
Figure 6.4. Personal semantic scores across three life periods as a function of depression group

The post-hoc analysis (MSE = 2.11, critical difference @ 5% is 1.77 and 1% is 2.07) showed the following effects. The main effect of depression can be clearly seen. On average, the reference and mild group recall more rich and detailed memories than the moderate and severe group (all p < .01). Looking at the temporal gradient for the different depression groups revealed the following effect. For the reference and mild groups, memories were equally vivid from early adulthood and the recent past, but less vivid memories from childhood (p < .01). The difference between the reference and mild group only approached significance for the memories from early adulthood (difference = 1.54, critical difference = 1.77). For the moderate and severe groups,
memories became less vivid as the time period became more remote (all p < .01, except for the change in the moderate group between early adulthood to childhood, p < .05). The magnitude of the temporal gradient from the recent past to childhood was the same for each of the four depression groups. Thus the source of the interaction is that the reference and mild groups show no decline from the recent past to early adulthood, but the moderate and severe groups do.

An equivalent analysis of the data from the autobiographical incident scale, showed a main effect of depression group (F(3,58) = 45.99, p < .001), a main effect of time period (F(2,116) = 156.6, p < .001) and a time period x depression group interaction (F(6, 116) = 3.29, p = .006). The form of the time period x depression group interaction for autobiographical incidents is shown in Figure 6.5. Post-hoc analysis for (MSE = .816, critical difference @ 5% is 1.10 and 1% is 1.28) showed the following effects. As with the analysis of the personal semantic schedule, the main effect of depression can again be clearly seen: the reference and mild show richer and more detailed recall than the moderate and severe groups. The changes found in the temporal gradient for the different depression groups are the same as those found for the personal semantic schedule. The reference and mild groups show no change from the recent life to early adulthood, but then a decline to childhood. The moderate and severe groups show a decline from recent life to early adulthood (both p < .01) and from early adulthood to childhood (both p < .01). There were no difference between the moderate and severe groups at any time period, but the mild group had a lower score than the reference group at the early adulthood period (p < .05). Again the
magnitude of the decline from the recent past to childhood is the same for all the four depression groups. Like the personal semantic schedule, the source of the interaction is that the reference and mild groups show no decline from the recent past to early adulthood, but the moderate and severe groups do.

Figure 6.5 Autobiographical incidents scores across three life periods as a function of depression group

In conclusion, on the two dimensions of the autobiographical memory interview (i.e., personal semantic schedule and autobiographical incident schedule), the performance
of the lower depression group (reference and mild) on both dimensions was more specific in content and richer in details than the higher depression group (moderate and severe). Imposed on this main effect of depression, there were differences in the temporal gradient for both kinds of memories and the pattern of changes were the same for both. For the moderate and severe groups, a temporal gradient was found across all the three life periods (childhood, early adulthood and recent life). However, for the reference and mild group, there was no temporal gradient from recent life to early adult life.

6.4 Discussion

Festinger, Riecken and Schachter (1956) proposed that two cognitions are dissonant "if they do not fit together- that is, if they are inconsistent, or if, considering only the particular two items, one does not follow from the other" (p.25). Dissonance results in a feeling that is psychologically aversive or unpleasant and, accordingly, a drive toward reducing this unpleasantness will be created. Dissonance can be reduced in many ways, such as changing one of the dissonant cognitions, decreasing the importance of the dissonant cognitions, and/or obtaining social support (Festinger, 1957; Festinger et al., 1956). Beike and Landoll (2000) recently proposed a similar model of self-consistency, cognitive reactions to autobiographical memory, and tested it within university students. In their model, they suggested that three methods could be taken to resolve self-inconsistency such as justification (explaining the inconsistent memory with an external factor), outweighing (adding additional recall to those inconsistent one), and closure (putting things behind oneself). In the present thesis
these three methods were investigated within clinical depressed patients using a methodology where participants selected the types of memory recalled. Given some of the issues surrounding the use of this method, the present study re-investigated the use of justification using a different design. The key difference is that the direct recall task was manipulated and participants were explicitly directed to recall two specific periods in their life (pleasant and unpleasant) and then directed to recall two specific memories (pleasant and unpleasant) from each time period. Thus, the recalled events were equated for memory valence and recall consistency across both the depressed patients and the reference group. While it has generally been found that the relationship between depression and attribution for negative events is stronger than the relationship with positive events (e.g., Seligman et al., 1979; Sweeney et al., 1986), the present study aimed to examine further the positive relationship found in experiment 1 within the high depression group (moderate and severe) between internal justification (more internal attribution) and negative recalled memories when recall valence was manipulated experimentally.

In Experiment 1, the groups with higher levels of depression (i.e., moderate and severe) showed higher levels of internal justification for the unpleasant recalled memories. In the present study, this was not found and only the mild group showed an influence of recall valence, but showed higher internal justification for pleasant compared to unpleasant memories. Indeed, the levels of internal justification for unpleasant memories did not differ for the four depression groups, with only the mild group showing higher internal justification for the pleasant memories. In addition,
both the depressed and reference groups had higher levels of internal justification for their unpleasant time period and their pleasant memories.

A possible explanation of the inconsistent findings may relate to the different design used in the present study. Particularly, the participants in Experiment 1 were asked to freely recall any period of their past and then to freely recall three memories from that period. The participant then asked to indicate their own evaluation for both the time period and the recalled memories. Thus, the severely depressed patients were more likely to recall more negative events from their past life period, and the reference group were more likely to recall positive events from their past life period. However, in the present study, the participants were directed to recall a two period of their lives that are pleasant and unpleasant and to provide for each period two memories: one pleasant and the other unpleasant. Thus, the valence of the memory in the present study was manipulated rather than left as a participant’s preferences, which lead to a balance valence of positive, and negative recalled memories for both depressed and reference group. Accordingly, the depressogenic attributional styles enhancement in the present study may relate to the increase number of positive events the depressed participants recalled when they explicitly directed to retrieve, compare to the time they were freely retrieve their memories in experiment 1. This explanation supported by the recovery model that developed by Needles and Abramson (1990) based on the hopelessness theory of depression (Abramson et al., 1989). In their model of recovery from depression, Needles and Abramson (1990) proposed that the occurrence of positive life events would interact with ‘enhancing attributional style’
to incite the development of hopefulness. Enhancing attributional style is defined as the tendency to make stable and global attributions for positive (rather than negative) life events. Thus, according to this model of recovery from depression, the occurrence of positive life events interacts with enhancing attributional style to promote the development of hopefulness, which may then lead to a reduction in depressive symptomatology.

One interesting finding concerns the borderline influence of memory recall valence across the pleasant and unpleasant time periods (see Figure 6.3). This showed that when participants recalled an unpleasant memory from an unpleasant period (consistent recall) they showed higher internal justification than when they recalled an unpleasant memory from a pleasant period (inconsistent recall). For pleasant memories, there was no influence of the type of time period from which the memory was recalled. That is, internal attribution was high for pleasant memories irrespective of time period, but was lower when an unpleasant memory was recalled from a pleasant time period. This pattern was not modified by depression status. According to Beike and Landoll (2000) there should be no influence of recall consistency on the level of internal attribution. The present study also found no significant influence of recall consistency on internal justification, although there was a tendency for higher internal justification for consistent recall. Although the interaction between memory valence and time period was only of borderline significance, it deserves further research because it points to a different form of internal attribution across pleasant and unpleasant time periods.
Turning now to life satisfaction (well-being) the findings were similar to those reported earlier (see all previous experiments). The more depressed participants (moderate and severe) showed lower levels of life satisfaction than the less depressed participants (reference and mild). In addition, the less depressed participants show a more positive view of their past life than the more depressed participants. The attitude of the mild and reference depression groups toward their past is in agreement with previous research that has suggested that people may bias their recall of past attitudes and behaviour in a manner that increases their consistency with their current attitudes (McFarland & Ross, 1987; Ross & Conway, 1986). This pattern is in contrast to that reported in earlier experiment for the depressed participants. While the severely depressed participants showed more positive attitude to their past life compared to the reference group in both Experiment 1 and 2, they did not differ in their attitude to the past compared to the reference group in Experiment 3. One possible explanation for this is that this measure of “past time attitude” was taken after the recall task. In the earlier studies, the depressed groups tended to recall mainly unpleasant memories whilst in current study they recalled two positive and two negative memories. The recalling of an equal number of pleasant and unpleasant memories may have forced the more depressed patients to evaluate both positive and negative memories, rather than just the negative ones recalled in the earlier studies. Thus, the influence of experimental design may again be important.

Williams and Broadbent (1986) suggest that people who were suffering an emotional disturbance had difficulty in being specific in their memory, and showed a greater
tendency to retrieve overgeneral memories. This case of over-general recall is frequently found in depressed and suicidal patients (Williams & Scott, 1988; Williams, 1992). In agreement with these studies, and as was predicted, the higher depressed patients showed a strong impairment performance on the autobiographical memory interview that encompasses two components: personal semantic schedule, and autobiographical incident schedule. On both components, that assesses individual’s recall of facts from their own past, and that assesses individual’s recall of specific events in their earlier life, the higher depressed (moderate and severe) group found to lie in the “definitely abnormal” range whereas the less depressed (reference vs. mild) groups were in the “acceptable” range. That is, the higher depressed groups have less specific and rich memories. In addition, as expected there was evidence of a temporal gradient in scores that was present for all four groups (reference, mild, moderate, and severe). However, this profile of this temporal gradient for autobiographical memory did help distinguish between the different depression groups. For the low depression group, the recall of personal semantic schedule and autobiographical incident remained high from the recent past and the early adult period, but declined from early adult life to childhood period. For the higher depressed group, the decline started earlier and there was a decline from the recent past to the early adult period for both the personal semantic schedule and the autobiographical incidents. Thus, one may conclude that it is the early decline in scores from the recent past to the early adult life period that is the time when the temporal gradient differentiates the more depressed groups.
One possible explanation of the generally poorer scores (arising from over-general memories) relates to an encoding deficit. People who are prone to emotional disturbance tend to encode preferentially general aspects of situation, and have a deficit in retrieving memories because they tend to stop their search for specific episodes when they reach intermediate (general) stages in retrieval (Williams & Scott, 1988). Williams (1996) developed these ideas further in describing the phenomenon of “mnemonic interlock”. Whenever a mnemonic cue activates categoric intermediate descriptions that begin to retrieve a negative specific episodic, the search is aborted. But the retrieval process attempts to perform another iteration at the level of intermediate descriptors that results in more recollections of overgeneral memory. A second explanation for this memory deficit (Shapiro, 1965; Singer, 1984; Mosak, 1958) suggests that this more global and summarizing style of encoding, storing, and retrieving information may reflect a defensive strategy of handling painful or threatening information for those who are suffering from painful memories. Having been exposed to a traumatic event is characteristic for PTSD and acute stress disorder, but having experienced traumatic events is also associated with depression and borderline personality disorder (e.g., De Marco, 2000; Zanarini, Ruser, Frankenburg, Hennen & Gunderson, 2000). Brewin (1998) suggest that over-general memories in depression might reflect an attempt to inhibit a repressed memory in an attempt to avoid instantiating vivid and intrusive trauma memory. Brewin goes on to point out that those over-general memories in depressed patients may constitute a defence against recall.
Furthermore, the model of Conway and Pleydell-Pearce (2000) make it possible to relate the temporal gradient found within depression groups in early adulthood, when the autobiographical knowledge is being acquired, organized and consolidated to form personal identity, to identity deficit. Early adulthood is a period in the life cycle which people are particularly prone to experience transitions and start building their personal identity (Bachman, O’Malley & Johnston, 1978). There are many examples of these transitions: leaving the parental home, becoming economically independent, leaving school for work, getting married, etc. Most authors claim that the school-to-work transition has positive effects (Clark, 1980; Tiggemann & Winefield, 1989). Previous studies found that the transition from school to work induces extra positive changes; people who make this transition become less vulnerable to boredom, less depressive, score lower on neuroticism, and they have more self-esteem (Van der Velde, Feij, & Taris, 1995; Tiggemann & Winefield, 1989). Accordingly, it is expected that when a depressed person retrieve an information from the early adulthood period, they may realize that some personally important goals may be left unachieved, and that their conceptions of the actual self, desirable, and potential courses of personal development at that time mismatches with their current depressed state. These discrepancies between the normative facts of self-representation at that time and current self-descriptive cognitions, lead to produce more general memories as a defensive strategy against vivid recall.
6.5 Summary

In spite of the findings that the four depression groups did not differ in their levels of internal attribution for their memories, justification processes within the high (moderate and severe) depressed group seems to be ineffective in reducing discomfort and restoring consistency. Accordingly, a reduction in well-being satisfaction clearly arises. However, they revealed a “natural” attitude toward their past in general compared to the low depression group (reference and mild) who showed positive attitude. Furthermore, the high depression group revealed a poorer ability to retrieve specific and detailed events in the both components of the autobiographical memory interview (i.e., personal semantic schedule and autobiographical incidents). Their performance in retrieving specific information appeared to decline from their recent life to childhood period and an early adulthood period seemed to be the point in the temporal gradient between the low and high depression group.
Chapter 7 General Discussion

7.1 Introduction and Overview

In the previous four chapters, the findings from the fieldwork that was conducted for the present thesis were discussed and interpreted separately in the light of the relevant literature. The purpose of the present chapter is to reflect on and discuss the studies as a whole, to draw general conclusions and their implications, to discuss the limitations of the research and, finally, to propose suggestions further related research.

The present four studies were designed to provide a framework for investigating the role of several types of cognitive reactions that theoretically would be expected to reduce discomfort and resolve inconsistency between a remembered life event and a belief about the lifetime period in which it occurred. Specifically, Beike and Landoll’s (2000) model of Cognitive Reaction to Memory (CRM) was adopted in the present thesis in order to investigate three types of cognitive reactions that were predicted by Beike and Landoll (2000) to reduce inconsistency and maintain individual’s well-being. The three methods of resolving inconsistency that were addressed in the first three experiments were: providing “justification” for the inconsistency, recruiting additional specific events that oppose those recalled (outweighing), and putting the events behind oneself (closure). Experiment four revisited the justification reaction using a different recall methodology. While Beike
and Landoll (2000) studied the predictions of their model using a young university student population, the main target of the current thesis was to examine the same model of CRM across several levels of depression (i.e., mild, moderate, and severe depression). Furthermore, autobiographical memory specificity in depression, across three life periods (childhood, early adulthood, and recent life), was addressed in the fourth experiment using the Autobiographical Memory Interview (AMI).

The present studies were conducted in a population where English was not the native language. Therefore, the instruments used by Beike and Landoll (2000) were adapted and validated for an Arabic speaking population. The instruments adapted and validated were the attributional scales (i.e., internal & external attribution scale), the closure reaction scale, the satisfaction with life scale (SWLS), and the time attitude scale (TAS). In addition, the Autobiographical Memory Interview (AMI) was also adopted and validated. Data was collected at the Kuwait Psychiatric Hospital and from two educational institutes: the Kuwait Telecommunication Institute and the Technology and Nursing Institute. In total, data were gathered from 364 depressed patients and 211 matched non-depressed individuals.

7.2 Discussion of the Findings

Beike and Landoll’s (2000) model proposes that three types of cognitive reactions are used to maintain well-being after recalling memories that are inconsistent with the life time period that these memories occurred in. The generality of this prediction
was examined in patients suffering from depression in four studies and sought to answer the following question: Do depressed patients show the same forms of engagement and employment of these three types of cognitive reaction as a non-depressed people? In non-depressed people, Beike and Landoll (2000) found that when threats to self-consistency are encountered, these reactions serve to resolve inconsistencies and help to maintain well-being. It is of considerable interest to determine whether depressed people employ these protective cognitive reactions. Perhaps it is the failure to employ them that is part of the cycle that serves to maintain their depressive state. The second aim of the thesis was to investigate whether overgeneral recall is an enduring characteristic of depressed individuals across three periods of their life (i.e., childhood, early adulthood, recent life). This issue was addressed by using a new departure from standard methods of memory specificity assessment, the Autobiographical Memory Interview (AMI). Each of the following section will address and discuss the findings across the four experiments that were covered in the present thesis.

7.2.1 Recall Consistency, Cognitive Reactions and Well-being in Depression

According to Beike and Landoll (2000) when individuals encounter a threat to their self consistency, by recalling memories that inconsistent with the life time period that memories occurred in, several types of cognitive reactions help to reduce the unpleasant feelings and maintain well-being. The present studies found no support for this prediction. This was not simply that the depressed patients did not employ these consistency resolving strategies, or that the reference population did not employ
them, but rather that employment of these strategies did not impact on well-being in
the manner predicted by Beike and Landoll. In fact, the level of well-being seemed
to alleviate when participants were engaged in internal justification and closure
reaction but only after the consistent recalled memories, while it doesn’t seemed to
have this influence with those participant who engaged in outweighing reaction.
Indeed, the level of well-being was substantially higher in the reference and mild
depression group compared to the moderately and severely depressed group
irrespective of whether their recalled memories were consistent or inconsistent with
the time period that those memories occurred in. As noted in previous chapters, there
are several possible explanations for the discrepancy between the findings of Beike
and Landoll’s (2000) study and the present series of studies.

Firstly, the participants in Beike and Landoll’s (2000) study were undergraduate
students and they were probably much younger than those taking part in the present
studies whose average age was about 32 years. Older adults, on average, appear to
have positive and satisfying affective lives (Carstensen & Charles, 1998). Compared
to young people, older people tend to view their lives as more of a “steady state” than
an upward trajectory (Ross, 1989; Ryff, 1991) and this may be particularly true in a
predominantly non-student sample. Recent research has suggested that older adults
remain emotional beings who not only experience a full range of emotions, but who
also seem to be more adept than their younger counterparts at avoiding negative
affective states (Carstensen, Pasupathi, Mayr & Nesselroade, 2000; Charles,
Reynolds & Gatz, 2001; Levenson, Carstensen, Friesen & Ekman, 1991; Mroczek &
Kolarz, 1998). Beyond affect, older adults show no decline in life satisfaction compared with younger adults (Diener, Suh, Lucas & Smith, 1999). Therefore, one possibility is that older people maybe less likely to show the relationship between consistency resolution and higher well-being when they recall positive events from negative lifetime periods (or vice versa).

Secondly, the possibility of individuals’ differences in the participants of both studies should be considered. It is important to note that several individual differences moderate the strength of self-enhancement concerns. Several pieces of research have proposed that self-enhancement concerns are more significant in those with a strong positive view of themselves such as those with high self-esteem (Baumgardner et al., 1986; Brown & Gallagher, 1992; Brown & Smart, 1991; Crocker et al., 1987; Swann, 1987; Wood et al., 1994), who are sociable (Alden, 1987; Meleshko & Alden, 1993), who show confidence and clearness about their self-concept (Baumgardner, 1990; Campbell et al., 1996), are more self-conscious (Carver, Antoni & Scheier, 1985) and non-repressors (Davis, 1987; Hansen & Hansen, 1988). In addition, people high in achievement motivation (Koestner & McClelland, 1990; McClelland & Koestner, 1992) and competence valuation (Epstein & Harackiewicz, 1992; Harackiewicz & Manderlink, 1984; Reeve & Deci, 1996) are more likely to be influenced by self-improvement concerns. This profile of self-enhancement concerns may be greater in the young university student sample of Beike and Landoll (2000) than in the more mature non-university sample studied here.
Thirdly, research in collectivist cultures, particularly East Asian, cultural context, reveals that consistency is not a fundamental motivator of behaviour or an indictor of good mental health, that it is believed to be in a Western cultural context. Whether cognitive dissonance is conceptualized as cognitive inconsistency (Festinger, 1957; Harmon-Jones, Brehm, Greenberg, Simon & Nelson, 1996) or as a threat to the self (Steele, 1988; Stone & Cooper, 2001; Thibodeau & Aronson, 1992), attempts to replicate Western studies of cognitive dissonance in East Asian societies have been largely unsuccessful (Cross, Gore & Morris, 2003). East Asians think in more holistic ways than Westerners, making them more comfortable with contradiction (Peng & Nisbett, 1999) and inconsistency (Suh 2002). For example, Heine and Lehman (1997), using a free-choice paradigm, found that Japanese students showed much less dissonance reduction than did the North American participants. Thus, they argued that individuals in more collectivist cultures may not experience dissonance because dissonance presupposes a stable independent self, whereas interdependent selves are defined in relationships with others, and are as a result more flexible (see Markus & Kitayama, 1991). In another study, Suh (2002) asked Korean and North American college students to describe themselves in several relationships (e.g., with a friend, a stranger, and a family member). Suh (2000) found that the Korean students’ self-descriptions across their relationships were less consistent than the North American student self-descriptions. Moreover, this index of consistency was less strongly related to well-being for the Korean students than for the North American students. Kitayama and Markus (2000) argued that the concepts of “being” and “wellness” are culturally construed, and that in some collective cultures, such as East
Asian societies, well-being derives from maintaining harmony in relationships and from self-critical, rather than self-enhancing, evaluations (see also Heine, Lehman, Markus & Kitayama, 1999). They suggested that consistency is not as important in East Asian cultures as it is in Western cultures. The more collective culture of Kuwait, compared to the more individualistic culture of the USA, may therefore be another source for discrepancies in the findings.

Lastly, attempts to replicate Beike and Landoll’s (2000) CRM model do not yet appear to have been undertaken and it is possible that consistency-inconsistency is not the heart of dissonance motivation. According to Steele’s (1988) self-affirmation theory, dissonance is not the aversive tension of logic-like inconsistency (Festinger, 1957), or the tension of self-inconsistency (Aronson, 1968, 1999), but rather the tension of a “threatened sense of self-integrity” (Steele, Spencer & Lynch, 1993, p.893). Dissonance occurs when one engages in behaviour or learns something about one’s self that threatens this overall perception of self-integrity (Nail, Misak & Davis, 2004).

That leads us to the debate over the importance of consistency versus positivity strivings that has gone on for several decades, mostly in the literature on self-enhancement versus self-consistency processes (for recent reviews see Brown, 1998; Sedikides & Strube, 1997). Do people really need consistency more than they need simply to cling on to a pleasant memory? Is it possible that the cognitive processes that underlie people’s reactions to positive and negative life experiences are related
more to well-being than just seeking self-consistency? The answer to this question was made salient by a study conducted by Seidlitz and Diener (1993) concerning differences in the processing of valence life events that are associated with subjective well-being. The study found that the tendency to interpret events more positively, as well as a higher incidence of positive versus negative life events, was associated with higher well-being. Another study conducted by Seidlitz and Diener (1997) showed that relatively more intense and enduring reactions to positive versus negative events were associated with greater happiness. In turn, more intense and enduring reactions to events were associated with better recall of the events. Thus, it was concluded that people’s subjective well-being is based in part on their memory of positive and negative life events, along with the positively and negatively valenced emotional reactions they experienced in relation to these events. Individuals who have encountered more positive events and fewer negative ones, who have tended to interpret their events positively, and who have reacted with greater intensity and extent to their positive events than negative ones are more likely than their counterparts to recall positive life experiences and to feel and report greater happiness.

Furthermore, there is evidence that positive experiences are as important in psychological disorders as negative experiences. Phillips (1968) carried out a study showing the important role that positive experiences play in psychological disorders. He reported the results from a community survey that attempted to shed light on the oft-reported social class differences in the rates of mental disorders. The survey
assessed the frequency of both positive and negative experiences in the respondent’s life. He found that positive and negative experiences were independent of each other. That is, those who reported having had the greatest frequency of recent positive experiences were not necessarily those who also reported having had the fewest negative experiences. High and low class groups did not differ on the frequency of negative experiences, but twice as many individuals in the high social class group reported having had many positive experiences in the past month. The results were interpreted as showing the importance of positive experiences in mental health, either directly or through offering protection in the face of stressful experiences.

Recently, research has focused on the diverse role that positive experiences might play in psychological disorders, mainly in terms of what occurs after the onset of disorder. There is an emerging trend from these studies that positive experiences have an important role to play in the processes of recovery, persistence, and relapse. George Brown and colleagues (Brown et al., 1992) found in a community sample that recovery from episodes of anxiety or depression was associated with the occurrence of a positive life event. Those who had recovered by the follow-up stage of the study (1 year later) were more likely to have experienced a positive life event that preceded the recovery. Such events appeared to have their effect either through increasing a sense of security or through providing an increased sense of hope for the future, what the authors called ‘fresh start’ events. These fresh start events were particularly important in recovery from depression, whereas anchoring events occurred more in the context of recovery from anxiety. Thus, based on the above findings and the
present ones, it seems that Beike and Landoll's model of CRM is likely to be inapplicable within depressed individuals. Indeed, memory recall valence seems to have the most impact on their cognitive reactions and wellbeing, rather than recall consistency. This issue will be discussed further below based on the findings of the present studies.

7.2.2 Cognitive Reaction and Memory Recall Valence in Depression

A great deal of recent research has focused on the impact of current emotions on memory. The mood people happen to be in when they recall events in their own lives influence is what past incidents or situations come to mind. When they are in good mood, people tend to remember happy events; when they are in a bad mood, they remember sad events. The results of the present thesis are consistent with this literature on mood congruency, at least for the severely depressed patients. Thus, the mildly and moderately depressed participants did not show significant differences in their memory recall valence from the reference participants, but the severely depressed patients had preferences for retrieving more unpleasant memories than pleasant memories. Studies conducted with pleasant and unpleasant words, and with autobiographical recollection, have shown that depressives tend to show a more negativistic memory bias than controls (for a review, see Blaney, 1986). Teasdale (1983) has proposed that Mood Congruent-Memory (MCM) might be an important maintenance mechanism in depression when he observed that if unpleasant memories are more accessible to depressed persons, remembering these events might help maintain their depressed mood. The findings related to MCM indicate that in
depression, unpleasant experiences should be more accessible for recollection. The greater accessibility of those memories might result in lowered expectancy for the success of certain coping activities, thus decreasing the likelihood that the depressed person will initiate mood-repair behaviours (Watkins, 2002).

The dominant interpretation of these results is that mood acts as a retrieval cue for memories of corresponding affective quality. Past events are presumably encoded along with the affect with which they are associated, and current mood cues these affective associations (Bower, 1981). The results can thus be construed as demonstrating a state-dependent effect. When they are in a specific mood, people remember best the past events that occurred when they were in that same mood. Another possible explanation is based on the supervisory attentional system (SAS) developed by Norman & Shallice (1980) and Shallice (1988). One important aspect of the SAS is that this putative system has access to the current self-concept and the active themes, goals, and plans of that self. During memory description generation, and in the evaluation phase of cyclic retrieval from long-term memory, the activation of knowledge is influenced by the current self-concept (Conway, 1996b, p.78).

The present studies suggest a “yes” answer to the question “do depressed people show some evidence of efficient engagement in the three types of cognitive reaction that theoretically could reduce inconsistency”? Yet, their engagement seemed to be in a way that confirms their current depressed mood rather than resolving inconsistency. Specifically, in the first experiment the moderately and severely depressed patients
showed more internal attribution to their negative recalled events than the reference and mild depression group. Indeed, they were more likely to blame themselves for the negative experience they recalled from their past in a way that enhances and confirms their current depressed mood.

In the second study, while the moderate and severely depressed patients engaged in more outweighing than the reference and mild depression group, outweighing was more common when the original recall was a pleasant event. That is, when they recalled pleasant memories, they tended to recall more unpleasant additional memories and these were consistent with the unpleasant time period. In contrast, when they selected a pleasant lifetime period, they tended to recall additional unpleasant memories that were consistent with the recall valence of the original memories. A body of evidence has accumulated that depressed individuals demonstrate a negative distortion of recall in that they recall negative events from their past more quickly than positive ones, and this is unlike non-depressed individuals who recall positive events more rapidly (Lloyd & Lishman, 1975; Blaney, 1986; Williams & Broadbent, 1986). In addition, information-processing studies in depression have suggested that disordered cognitions are most evident in situations or tasks that require sustained effort or attention (Stromgren, 1977; Weingartner, 1986). Furthermore, Hartlage et al. (1993) have proposed a ‘cognitive effort hypothesis’ suggesting that cognitive deficits in depression are dependent on the difficulty of the task to be performed, with impairment increasing in accord with the cognitive effort the task requires. As the outweighing cognitions require more effortful processing (Frey, 1986), it should be easier for the high depression group to add unpleasant
cognitions for the pleasant events recalled than pleasant cognitions for the unpleasant
events.

Finally, in the third study in which closure reaction was examined, while the
reference group show more “closure” for their unpleasant recalled memories, the
moderately and severely depressed patients showed more closure to their pleasant
recalled events. While their cognitive reactions did not protect their well-being,
nevertheless, it worked well in resolving the inconsistency between their pleasant
recalled memories and their current depressive mood. Bower (1981) found that
ratings of current intensity of feelings associated with prior experiences shifted in the
direction of present mood. Williams (1992) described a depressed woman who
revised her feelings about a pleasant experience after a subsequent unpleasant
episode. He suggested that her revisionist account was due to hindsight bias, that is,
that in order to account for the recent unpleasant event she altered her account of the
prior one so that it now could be seen as forecasting more unpleasantness.

Studies of the effects of mood on accessibility suggest that once an individual
becomes depressed there is an increase in the probability of just those cognitions that
maintain depression and a decrease in those cognitions that might alleviate it. This
reciprocal relation between depression and cognition could form the basis of a vicious
cycle. That is, (a) negative cognitions appear to produce depression, (b) depression
increases the probability of negative cognitions that will cause further depression and
(c) this cycle serves to perpetuate depression (Bower, 1981; Clark & Teasdale, 1982;
7.2.3 Attributional Style in Depression

Attribution constructs have become increasingly important in theories of depressive symptoms (Abramson et al., 1978; Miller & Norman, 1979). Attribution models suggest that people form beliefs about the causes of events (e.g., I failed because I lack ability). These beliefs vary in the degree to which the cause can be characterized as internal or external to the individual (locus of causality), stable or unstable over time, and global versus specific in the range of its effects. For example, ability is usually conceptualized as a characteristic of the individual rather than the situation (internal locus of causality), as something that does not change substantially over time (stable), and as something that permeates the individual's life (global). These three dimensions of the causes (locus of causality, stability, or globality) are thought to be related to depressive symptoms. Casual attributions style was examined in experiment 1 and experiment 4 where internal justification was the focus of both studies.

The findings of Experiment 1 were congruent with a body of research that suggests that people with depressed mood make excessively internal, global and stable attributions for negative events (Abramson et al., 1989; Abramson et al., 1978; Brewin, 1986; Robins & Hayes, 1995; Sweeney et al., 1986). In fact, the moderately and severely depressed participants showed high internal attribution to their unpleasant recalled memories compared to the reference and mildly depressed participants who showed a self serving attributional bias (i.e., a tendency to attribute
positive outcomes to one's own actions, but negative outcomes to external causes). Abramson and her colleagues (1989) postulate that negative life events attributed to causes that are stable (not likely to change) and global (likely to affect many outcomes) may incite 'generalized hopelessness' which, in turn, may lead to symptoms of hopelessness depression – a subtype of depression that overlaps considerably with DSM-IV classification of major depression (American Psychiatric Association, 1994). Accordingly, the underlying psychological process for the effect of this dysfunctional attributional style is the sense of helplessness (Abramson et al., 1978; Peterson & Seligman, 1984) and hopelessness (Abramason et al., 1989) associated with pessimistic explanatory styles. Depressed individuals were found to hold pessimistic and "hopeless" beliefs, react to reinforcement in a pessimistic manner, and show a general negative bias in their attributions about events even if those events were not self-relevant (e.g., Riskind et al., 1987; Alloy & Ahrens, 1987; see also Abramson et al., 1989 and Sweeney et al., 1986). The basic premise of this work has been that a person suffering from depression explains events in a self-defeating fashion, and that this attributional style lowers the person's expectancies, motivation, and performance, thereby sustaining the symptoms.

While in the first experiment, the groups with higher levels of depression (i.e., moderate and severe) showed higher levels of internal justification for unpleasant memories, surprisingly, this was not found in Experiment 4. In this experiment participants were directed to recall both pleasant and unpleasant memories from pleasant and unpleasant time periods. Only the mild group showed an influence of
recall valence, but this showed higher internal justification for pleasant, compared to unpleasant, memories.

One possible explanation for this discrepancy draws on the Response Styles theory of Nolen-Hoeksema (1987). Ruminative responses are a kind of self-focus and this increases the availability of negative thoughts and memories about the self (see also Duval & Wicklund, 1972; Pyszczynski et al., 1987; Pyszczynski, Hamilton, Herring & Greenberg, 1989). Individuals who are clinically depressed or in whom a sad mood has been induced have been found to recall a greater number of unhappy life events (Clark & Teasdale, 1982; Natale & Hantas, 1982; Snyder & White, 1982), to recall experiences that are more negative (Clark & Teasdale, 1982; Lewinsohn & Rosenbaum, 1987; Madigan & Bollenbach, 1982), and to recall negative events faster (Lloyd & Lishman, 1975; Rholes, Riskind & Lane, 1987; Teasdale & Fogarty, 1979; Williams & Scott, 1988) than non-depressed individuals or those in whom a happy or neutral mood has been induced. People who ruminate while in a depressed mood may be especially likely to retrieve or pay attention to these negative memories and to use them in interpreting their current situation. In turn, these negative memories may further exacerbate depressed mood through their effects on negative thinking and poor problem solving, thus feeding a vicious cycle between rumination, mood, and negative thinking (Teasdale, 1983). This is was the case in experiment 1 where (a) participants were asked to freely recall their memories and (b) the severely depressed participants showed more preference in retrieving unpleasant memories.
In contrast, the memory recall valence was explicitly manipulated in experiment 4. Participants were asked to recall two periods from their life (one pleasant and one unpleasant) and then recall two memories from each time period (one pleasant and one unpleasant). Thus, the recall valence of the pleasant and unpleasant memories was equal. Certainly, the depressed participants recalled more pleasant memories than those they freely recalled in experiment 1. Nolen-Hoeksema and her colleagues (Nolen-Hoeksema, 1987; Morrow & Nolen-Hoeksema, 1990) have proposed that distraction is good in reducing depression because it will alleviate depressed mood that allows clear reflection on the specific cause or stressor. Thus, directing depressed people to recall positive memories might be a kind of distraction to their cognitive style that tends to show more preference in retrieving negative experiences than positive one. Thus, the balance of negative and positive recalled memories may distract the process of a vicious cycle between rumination, and mood, in a way that alleviates the negative thinking.

Another explanation of why depressed people showed an enhancement in their depressogenic attributional styles derives from the recovery model developed by Needles and Abramson (1990) from the hopelessness theory of depression (Abramson et al., 1989). In their model of recovery from depression, Needles & Abramson (1990) proposed that the occurrence of positive life events interacts with ‘enhancing attributional style’ to support the development of hopefulness. Enhancing attributional style is defined as the tendency to make stable and global attributions for positive (rather than negative) life events. Thus, according to this model of recovery
from depression, the recalling of more positive life events interacts with enhancing attributional style to promote the development of hopefulness, which may then lead to a reduction in depressive symptomatology.

7.2.4 The Specificity of Autobiographical Memory in Depression

In examining the connection between depression and the quality of the memory that is retrieved in the autobiographical memory interview, the findings were consistent with the body of evidence that depressed people find it more difficult to recall specific autobiographical memories than a control group of non-depressed persons (e.g., Kuyken & Dalgleish, 1995; Moore, Watts & Williams, 1988; Puffet, Jehin-Marchot, Timsit-Berthier & Timsit, 1991; Williams & Dritschel, 1988; Williams & Scott, 1988; Williams, 1996). In agreement with these studies, and as predicted, the moderately and severely depressed patients showed a strong impairment on the two components of the autobiographical memory interview. This assesses the individual’s recall of facts from their own past (personal semantic schedule) and the recall of specific events in their earlier life (autobiographical incident schedule). Scores for the moderately and severely depressed groups were in the “definitely abnormal” range whereas the reference and mildly depressed individuals were in the “acceptable” range. That is, the higher depressed groups (moderate and severe) have less specific and rich memories. Furthermore, an evidence of a temporal gradient in scores was present for all four groups (reference, mild, moderate, and severe).
The problem depressed people have in retrieving specific positive memories appears to reside in them easily gaining access to a general level memory, but being unable to progress beyond this general level. Accordingly, increased recall of overgeneral autobiographical memories is a process that appear unique to depression (McNally et al., 1995). Overgeneral memories tend to be of two types (see Williams & Dritschel, 1992), either categorical (a summary of repeated memories, e.g., waiting at bus stops, making mistakes) or extended in time (taking place over a period longer than one day, e.g., on holiday in Egypt). Several possible explanations of overgenerality in autobiographical memory are discussed next and this is ties in with the differences in the temporal gradient found for those with depression.

The first possible clue is provided by the work of Brewin and colleagues (e.g., Brewin et al., 1999; Reynolds & Brewin, 1999) who found that the occurrence of intrusive autobiographical memories of negative life-events is a common feature of depression. In this particular respect, depression closely resembles PTSD, in which intrusive memory is a hallmark symptom. Kuyken & Brewin (1995) indicated that depressed women who were sexually abused in childhood had more difficulty in producing specific memories than depressed women without such a history. Thus, their finding suggests that overgeneral autobiographical recall may depend on childhood trauma rather than the presence of a trauma-related disorder per se. The sustained attention that traumatized children devote to physical and/or emotional survival is thought to interfere with encoding or retention of early autobiographical memories. It is posited that the memory impairment that observed in trauma may be
linked to an underlying motivation to protect the integrity of nascent schemas and psychological well-being in a child. In particular, the insertion of trauma in autobiographical account may threaten basic schematic structures and assumptions (e.g., safety); thus, one adaptation may be to leave the traumatic material unassimilated, thereby disrupting memory and basic schema formation (Bartlett, 1932; Fine, 1990; Horowitz, 1991; Janoff-Bulman, 1989; Piaget, 1967; Schachtel, 1959; Singer & Salovey, 1991). Following this line of reasoning, Williams (1996) argued that traumatized children might adopt and persist in a general retrieval style in order to avoid memories of intensely aversive experiences. According to Williams (1996), the young child tries to make sense of its world in representing it as general events. In normal development, the child learns to differentiate events thereby making memories more specific. However, the traumatized child passively avoids the recollection of these specific memories.

A second possible explanation of the tendency for depressives to be overgeneral may relates to a premorbid (i.e. trait) failure to encode memories at a specific level. Alternatively, this phenomenon may be due to a defective retrieval strategy that aborts the recall process prematurely before a specific memory has been accessed. People who are prone to emotional disturbance tend to encode preferentially general aspects of situation, and have a deficit in retrieving memories because they tend to stop their search for specific episodes when they reach intermediate (general) stages in retrieval (Williams & Scott, 1988). Williams (1996) developed these ideas further in describing the phenomenon of “mnemonic interlock”. Whenever a mnemonic cue
activates categoric intermediate descriptions that begin to retrieve a negative specific episodic, the search is aborted. In this case, further attempts of retrieval are initiated causing the retrieval process to iterate on the level of overgeneral categoric descriptions of events. The activation of categoric descriptions automatically activates further categoric descriptions and that, consequently, the memory search of individuals with such a network progress horizontally from categoric memory to categoric memory, rather than vertically from general to specific memories.

The last possible explanation for this memory deficit suggests that this more global and summarizing style of encoding, storing, and retrieving information may reflect a defensive strategy of handling painful or threatening information for those who are suffering from painful memories (Shapiro, 1965; Singer, 1984; Mosak, 1958). Brewin (1998) goes on to suggests that over-general memories in depression might reflect an attempt to inhibit or repress memory in an attempt to avoid intrusive trauma memory. Thus, another explanation is to view over-generality as a dynamic coping mechanism for dealing with negative affect. The impairment in producing specific autobiographical memories might in itself be stimulated by rumination (Williams, 1996). Recently, Watkins et al. (2000) found that distraction produces significantly greater decreases in overgeneral memories than rumination does. It therefore might be that the production of categorical memories is an attempt to counterbalance the negativity that is associated with rumination. As rumination has been found as one of the most reflective coping styles in depressive mood and in several psychiatric disorder (Nolen-Hoeksema, 1990; Matthews & Wells, 2000; Sakamoto, 2000) it
might well be that the expansion of rumination, rather than childhood trauma or defective encoding and retrieval, is the most important factor for sustaining the impairment in the recall of specific autobiographical memories.

The profile of the temporal gradient that was found in the present thesis for autobiographical memory distinguished between the different depression groups, that is, for the low depression group, the recall of personal semantic schedule and autobiographical incident remained high from the recent past and the early adult period, but declined from early adult life to childhood period. For the higher depressed group, the decline started earlier and there was a decline from the recent past to the early adult period for both the personal semantic schedule and the autobiographical incidents. Thus, one may conclude that it is the early decline in scores from the recent past to the early adult life period that is the time when the temporal gradient differentiates the more depressed groups.

The model of Conway and Pleydell-Pearce (2000) make it possible to relate the temporal gradient found within depression groups in early adulthood, when the autobiographical knowledge is being acquired, organized and consolidated to form personal identity, to an identity deficit. According to this model, autobiographical memories are transitory mental constructions generated from an autobiographical knowledge base. Autobiographical knowledge is held in this base at different levels of specificity, the most specified level being that of highly specific single details, such as the sensory and perceptual details of a particular event. The model also
suggested that the formation of autobiographical memories is controlled by a set of structured goals, the working self. Through it current goals, motivation and desires, the working self functions as a control process that coordinates and modulates the encoding and the retrieval of autobiographical memories. Specific memories often arise in response to experiences of goal attainment or goal failure. They form what individuals regard as themselves in these goals and needs. Thus, specific memories express a sense of personal identity that is stable across various lifetime periods.

Early adulthood is a period in the life cycle which people are particularly prone to experience transitions and start building their personal identity (Bachman et al., 1978). There are many examples of these transitions: leaving the parental home, becoming economically independent, leaving school for work, getting married, etc. Most authors claim that the school-to-work transition has positive effects (Clark, 1980; Tiggemann & Winfield, 1989) and many studies report that this transition induces extra positive changes; people who make this transition become less vulnerable to boredom, less depressive, score lower on neuroticism, and they have more self-esteem (Van der Velde et al., 1995; Tiggemann & Winefield, 1989). Accordingly, it is expected that when a depressed person retrieves information from their early adulthood period, they may realize that some personally important goals may be left unachieved, and that their conceptions of the actual self, desirable, and potential courses of personal development at that time mismatches with their current depressed state. These discrepancies between the normative facts of self-
representation at that time and current self-descriptive cognitions, lead to produce more general memories as a defensive strategy against vivid recall.

As researchers have found that depressive symptoms are often present several years before the onset of the disorder (Pine, Cohen, Cohen & Brook, 1999), another possible explanation is related to the predictors of depression occurring in the transition to adulthood. As was mentioned earlier, this transition period is a pivotal time in which youth negotiate many developmental tasks, including strengthening and expanding self-concepts, forming stable intimate relationships, making career decisions, and achieving independence from parents (Arnett, 2000). Resolution of these challenges is essential for successful assumption of adult roles. However, experiencing the onset of depression may interfere with the attainment of these skills and lead to poor adjustment in adulthood (Reinherz, Giaconia, Carmola-Hauf, Wasserman & Silverman, 1999; Lewinsohn, Rohde, Klein & Seeley, 1999). A person may grow up in such environment learn that specific episodic information is too negative, so the person passively avoids this punishing consequence of recollection (see Williams, 1996, p.260 for a review). Accordingly, depressed individuals might consider this period of life as a critical period that involves traumatic memories that they try to inhibit or repress by retrieving over-general memories (Brewin, 1998).
7.3 The Study’s Limitation and Treatment Implication

This thesis has two limitations that restrict the conclusions that can be drawn from the result. First, the present study involves using only one type of methodology in order to measure the cognitive reaction to autobiographical memories in depression. Accordingly, the researcher was not able in some stages to collect inconsistent recall from the highly depressed participants due to their moods' nature and their preference to recall unpleasant memories from an unpleasant period of their lives and that led to more consistent recalled memories. However, this limitation was addressed in the last study of the present thesis. Another limitation might involve the choice of control subjects. The present thesis used normal volunteers who were matched for age, sex, and educational level to the depressed participants; however, hospitalized depressed participants may experience considerable anxiety and apprehension as a consequence of their hospitalization, per se, which in turn might affect their capacity to sustain effortful concentration. Thus, future research endeavours would also benefit from including control group of hospitalized psychiatric patients with diagnosis other than mood disorders to assure that the cognitive impairment in patients with major depression is related to their illness and is not a consequence of the non-specific stress of psychiatric hospitalization.

Despite these limitations, the present thesis sustains the view that a person suffering from depression explains events in a self-defeating fashion (Abramson et al., 1978; Weiner, 1979; Weiner & Litman-Adizes, 1980), and that the depressed state is accompanied by changes in memory functioning. Typically, depressed individuals
find it relatively easier to recall negative events and relatively harder to recall positive ones (Dalgleish & Watts, 1990; Matt, Vazquez & Campbell, 1992). The implication of the effects of mood on accessibility for our understanding of clinical depression rests on the suggestion from cognitive models of depression (Beck, 1967, 1976) that certain types of negative interpretation of experiences can produce symptoms of depression. If in a depressed mood the accessibility of negative cognitions is increased, and the accessibility of positive cognition is decreased, then once a person become depressed there is likely to be an increase in the probability of just those cognitions that will produce further depression and a decrease in the probability of cognitions that are likely to alleviate it. Therefore, this phenomenon may act as a vulnerability factor that modulates the long-term course of depressive disorders.

As to the clinical implications, several remarks are in order. First, patients with poor specific recall of negative events are at risk for chronicity. Thus, it may well be that standard cognitive therapy and antidepressant medication is likely to fail in these patients. Perhaps other therapeutics strategies and cognitive intervention, directed at changing their non-specific cognitive style, are more suited for these patients (Williams, Teasdale, Segal & Soulsby, 2000). In addition, continuation and maintenance of a treatment routine might be indicated in these patients as they may be more susceptible to relapse and recurrence. In patients with more specific recall of negative events, treatment aimed at processing and discussing these experiences in terms of problem-solving strategies (e.g., interpersonal psychotherapy) seems more indicated. Also, they may benefit from the use of cognitive techniques directed
towards enhancing the specificity of information processing, for example, through the use of task assignments such as diary keeping or through providing life review intervention that may include participation in individual one-on-one reminiscence, reflection on one’s personal evaluation of events, and coverage of the entire lifespan (Haight & Dias, 1992). Furthermore, the recovered recurrently depressed patients should be trained in mindful self-awareness as a way to counter rumination and so reduce risk of future relapse and recurrence. Teasdale (1999) contrasted ruminative self-focus and mindful self-awareness as distinct and incompatible modes of mind, the former focusing on analytical, “thinking about” experience, the latter focusing on direct, intuitive, experiential awareness of experience in the moment. Williams et al. (2000) reported that mindfulness-based cognitive therapy significantly reduce the recall of categorical memories in remitted depressed patients, compared to a treatment as usual condition. Mindfulness based cognitive therapy is a relapse prevention treatment, teaching meditative approaches as well as standard cognitive therapy skills. Furthermore, as the predictors of major depression occurring in the transition to adulthood might have the potential of resulting in impaired functioning later in recent adulthood. Thus, it is important to identify and treat and monitor youth who express anxiety and depressive symptoms in early adulthood.

7.4 General Conclusions

Four main conclusions can be drawn from the present thesis. Firstly, the findings of this study failed to support Beike and Landoll’s (2000) prediction that cognitive reactions maintain well-being after recalling memories that inconsistent with the time
period that occurred in. Instead of memory recall consistency, the memory recall valence (pleasant vs. unpleasant) appeared to have more impact on the employing of the three examined types of cognitive reactions. Specifically, depressed participants showed justification, outweighing, and closure to their recalled memories but in a way that enhance and support their negative self-concept and their current depressive mood. A “depressogenic” attributional style” found to be a dominant characteristic of depressed individuals, and mood congruent memory appears to be a reliable phenomenon in depression.

Secondly, increased recall of over-general autobiographical memories is a process that appears to be one of the most reliable features of memory in depression (Kuyken & Brewin, 1995; Williams, 1992; Williams & Broadbent, 1986). Depressed patients were found to retrieve significantly fewer specific memories and more over-general memories than non-depressed individuals. Early decline in scores from the recent past to the early adult life period is the time when the temporal gradient differentiates the more depressed groups.

Thirdly, the fact that the mildly depressed participants did not differ significantly from the reference participants in their cognitive reaction and memory recall valence indicates that negative self-relevant information may not become so well connected until individuals progress to a more severe depression. Thus, mild level of depression may count as a transition period where the one set of depression starts in and should be given more attention and caution in treatment.
Lastly, the memories of the severely depressed group were predominantly unpleasant ones. Since these memories tended to also come from unpleasant time periods, this would lead to a classification of "consistent recall" in the same way that for the reference group, who were more likely to recall pleasant memories from a pleasant time period which lead to "consistent recall" too. It is not perhaps surprising therefore that it is memory recall valence rather than recall consistency that has the major impact.
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Appendices
APPENDIX (1)

DSM IV Diagnostic Criteria for Major Depression
A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

Note: Do not include symptoms that are clearly due to a general medical condition, or mood-incongruent delusions or hallucinations.

1. depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). Note: In children and adolescents, can be irritable mood.
2. markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others).
3. significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. Note: In children, consider failure to make expected weight gains.
4. insomnia or hypersomnia nearly every day.
5. psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings or restlessness or being slowed down).
6. fatigue or loss of energy nearly every day.
7. feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).
8. diminished ability to think or concentrate, or indecisiveness, nearly every day (either subjective account or as observed by others).
9. recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

B. The symptoms do not meet criteria for a mixed episode.

C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).

E. The symptoms are not better accounted for by bereavement, i.e., after the loss of a loved one; the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.
APPENDIX (2)
The Kuwait General Hospital’s Authorization Letter
TO WHOM IT MAY CONCERN

This is to certify that Ms. Hayfaa Ali Al-Yousef has obtained permission from the Psychological Medicine Hospital Administration in Kuwait for the purpose of doing a study on patients with depression. The study took place from December 2000 to April 2002.

Mrs. Hayfaa obtained consent from all patients involved in the study.

DR. MOHAMED ALI AREF
CHAIRMAN OF PSYCHIATRIC DEPT.
PSYCHOLOGICAL MEDICINE HOSP.
KUWAIT.

DR. BOTHAINA AL-MAKHAWI
HEAD OF PSYCHOLOGICAL DEPT.
PSYCHOLOGICAL MEDICINE HOSP.
KUWAIT.
APPENDIX (3)

Instructions Page
INSTRUCTIONS

Please read the information enclosed and follow the written instructions to the best of your ability, working at your own pace. Please refrain from talking to other participants until you are done with the study. If you have any questions about the instructions or the study, feel free to ask the experimenter for clarification. When a rating scale appears, please mark one and only one response for each item. We also ask in this study that you complete each page in the order given. Please do not skip ahead to a page, or turn back to a page once you have completed it and gone on. Thank you for your participation and cooperation.

This study concerns your thoughts about events that you have experienced in your life. We are interested in how people think and feel about these events and themselves. You will be asked to describe some events and answer some questions about yourself. Keep in mind that your responses are completely confidential, so you can feel free to be honest in your responding.
APPENDIX (4)

The Measure of Internal Justification
First, we would like you to think of a time period in the past (at least 3 years ago) that you can remember well (for example, freshman year in high school) and write it down with your own evaluation to that period. Now, try to think of several pleasant or unpleasant events that occurred at that time. These should be specific memories of events that occurred over periods of seconds, minutes, and hours, but no longer than one day. Write a brief (one to two sentences) description of each event below with your own evaluation to each event (pleasant or unpleasant).

The Time Period: ____________________________ ( ).

Events:

1. ____________________________________________
   ____________________________________________

2. ____________________________________________
   ____________________________________________

3. ____________________________________________
   ____________________________________________

You have just listed several pleasant or unpleasant events. Now we would like to know what you think caused those events to occur. Sometimes things happen because we ourselves make them happen, and sometimes, things happen due to someone else's actions, or peer pressure that forces us to go along, or just simple luck. To what extent do you think YOU caused each event, and to what extent do you think someone or
something else BESIDE YOU caused each event? Answer this question in the next page separately for each of the events you listed in the previous page.

**Event # 1**

To what extent do you think YOU caused this event to happen? CIRCLE ONE NUMBER.

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To what extent do you think SOMETHING/SOMEONE ELSE caused event to happen?

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**Event # 2**

To what extent do you think YOU caused this event to happen? CIRCLE ONE NUMBER.

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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To what extent do you think SOMETHING/SOMEONE ELSE caused event to happen?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all caused by something else</td>
<td>Somewhat caused by something else</td>
<td>Very much caused by something else</td>
<td>Entirely caused by something else</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Event #3

To what extent do you think YOU caused this event to happen? CIRCLE ONE NUMBER.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all caused by me</td>
<td>Somewhat caused by me</td>
<td>Very much caused by me</td>
<td>Entirely caused by me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

To what extent do you think SOMETHING/SOMEONE ELSE caused event to happen?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all caused by something else</td>
<td>Somewhat caused by something else</td>
<td>Very much caused by something else</td>
<td>Entirely caused by something else</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX (5)

The Measure of Outweighing
First, we would like you to think of a specific time period in the past (at least 3 years ago) that you can remember well (for example, freshman year in high school) and write it down with your evaluation to that time (pleasant or unpleasant). Now, try to think of several pleasant or unpleasant events that occurred at that time. These should be specific memories of events that occurred over periods of seconds, minutes, and hours, but no longer than one day. Write a brief (one to two sentences) description of each event below.

The Time Period: 

Events:

1. 

2. 

3. 

You have just told us about three pleasant or unpleasant events. What other events or behaviors came to your mind as you were thinking about and describing these events? These events may be similar to or different from the events you listed above. Write a brief description of these events or behaviors that you were
reminded of. List one additional event for each of the original one. Leave the short line before each number blank for the moment.

_____ 1. ________________________________________________________________

_____ 2. ________________________________________________________________

_____ 3. ________________________________________________________________

Now, in the short line before each number, label how you would describe each event. Write in one of these symbols for each:

+ = a positive or pleasant event
- = a negative or unpleasant event

If the event seems neither pleasant or unpleasant to you, use the + symbol
APPENDIX (6)

The Measure of Closure
First, we would like you to think of a time period in the past (at least 3 years ago) that you can remember well (for example, freshman year in high school) and write it down with your own evaluation to that period. Now, try to think of several pleasant or unpleasant events that occurred at that time. These should be specific memories of events that occurred over periods of seconds, minutes, and hours, but no longer than one day. Write a brief (one to two sentences) description of each event below with your own evaluation (pleasant or unpleasant).

The Time Period--------------------------------------------------------------- ( ).

Events:

1. ------------------------------------------------------------------------
   ------------------------------------------------------------------------
   ------------------------------------------------------------------------

2. ------------------------------------------------------------------------
   ------------------------------------------------------------------------
   ------------------------------------------------------------------------

3. ------------------------------------------------------------------------
   ------------------------------------------------------------------------
   ------------------------------------------------------------------------

You have just listed several pleasant or unpleasant events. Now we would like to know how you view those events today. Sometimes with time we get a feeling of understanding or 'closure' about past events, and we can put those events behind us. Sometimes, we can't seem to feel this 'closure' and the events continue to concern us.
To what extent do you have understanding or ‘closure’ for each event you described? Answer this question separately for each of the events you listed on the previous page.

**EVENT # 1**
How well-understood and “closed” is this event for you? CIRCLE ONE NUMBER.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete lack of closure (don’t yet understand)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very little closure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some of closure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A good deal of closure (understand well)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete closure</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**EVENT # 2**
How well-understood and “closed” is this event for you? CIRCLE ONE NUMBER.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete lack of closure (don’t yet understand)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very little closure</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some of closure</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A good deal of closure (understand well)</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Complete closure</td>
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</tr>
</tbody>
</table>

**EVENT # 3**
How well-understood and “closed” is this event for you? CIRCLE ONE NUMBER.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete lack of closure (don’t yet understand)</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very little closure</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some of closure</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A good deal of closure (understand well)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete closure</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX (7)

The Measure of Internal Justification (Revisit)
Participant #

First we would like you to think of a happy time period in the past (at least 3 years a go) that you can remember well and write it down. Now, try to think of one pleasant event and another unpleasant one that had occurred during that time period. These should be specific memories of events that occurred over periods of seconds, minutes, and hours, but no longer than one day. Write a brief description of each event below.

1- Happy Time Period ---------------------------------------------

A. Pleasant event...........................................................................
   .............................................................................................

B. Unpleasant event......................................................................
   .............................................................................................

Now after you wrote down one pleasant event and another unpleasant one from a specific happy time period, we would like you to recall an unpleasant time period from the past (at least 3 years a go) that you can remember well and to list one pleasant event and another unpleasant one that had occurred during that time period. The event should be specific and not take more than one day.

1- Sad Time Period -----------------------------------------------

A. Pleasant event...........................................................................
   .............................................................................................

B. Unpleasant event......................................................................
   .............................................................................................
APPENDIX (8)

The Measure of Well-being
Below are five statements with which you may agree or disagree. Using the 1 to 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is:

1= strongly disagree
2= disagree
3= slightly disagree
4= neither agree nor disagree
5= slightly agree
6= strongly agree

_____ 1. In most ways my life is close to my ideal.

_____ 2. The conditions of my life are excellent.

_____ 3. I am satisfied with my life.

_____ 4. So far I have gotten the important things I want in life.

_____ 5. If I could live my life over, I would change almost nothing.
APPENDIX (9)
The Measure of Past Time Attitude
For the following 10 items, please respond by placing a check mark in the appropriate box at the point on the scale that most agrees with how you feel. For the items on this page, you will be indicating how you feel about the past in general. Make your check marks this way in the box:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>

The numbers over each box correspond to how you feel about each dimension, and how extremely you feel that way. For the first pair of adjectives, pleasant-unpleasant, the numbers mean the following:

If you check: This means you feel the past is:

1. Very pleasant
2. Pleasant
3. Rather pleasant
4. Neither pleasant nor unpleasant
5. Unpleasant
6. Very unpleasant

This is just an example of how the endpoints “translate” into the scale numbers. For each item, the numbers 1 through 7 represent the same sort of scale, but with the adjectives given as the endpoints for that particular scale. Remember to check ONLY ONE box per item.

1- Pleasant

2- Full

3- Beautiful

4 - Cold
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5- Accomplished</td>
<td>Disappointment (Failure)</td>
</tr>
<tr>
<td>(Success)</td>
<td></td>
</tr>
<tr>
<td>6- Boring</td>
<td>Exciting</td>
</tr>
<tr>
<td>7- Light</td>
<td>Dark</td>
</tr>
<tr>
<td>8- Hopeful</td>
<td>Hopeless</td>
</tr>
<tr>
<td>9 - Difficult</td>
<td>Easy</td>
</tr>
<tr>
<td>10- Important</td>
<td>Unimportant</td>
</tr>
</tbody>
</table>
APPENDIX (10)

The Autobiographical Memory Interview (AMI)
**Note**

Please follow the instructions provided in the Manual when using this Scoring sheet.

For all autobiographical incidents questions please refer to pages 6 and 7, and Appendix 1 of the Manual for scoring details and examples.

<table>
<thead>
<tr>
<th>Subject’s details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Date of birth</td>
</tr>
<tr>
<td>Date of test</td>
</tr>
<tr>
<td>Reason for referral</td>
</tr>
</tbody>
</table>
## Section A: Childhood

### Part 1: Period before school

1.1 Subject's address before going to school

Correct = 2  
Street and town only = 1  
Town or street only = ½

<table>
<thead>
<tr>
<th>Max</th>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.2 Names of three friends or neighbours from the period before the subject went to school

Each correct = 1  
Each first name only = ½

Maximum = 5  
Total

<table>
<thead>
<tr>
<th>Max</th>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A1 Recall of an incident from the period before the subject went to school

(Prompts: ‘Your first memory?’, ‘Involving a brother or sister?’)

<table>
<thead>
<tr>
<th>Max</th>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Part 2: First school (i.e. 5–11 years)

<table>
<thead>
<tr>
<th>Question</th>
<th>Scoring details</th>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Name of first school</td>
<td>Correct = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2.2 Location of this school</td>
<td>Town or city = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2.3 Subject's age when starting at this school</td>
<td>Correct = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2.4 Subject's address when starting at this school</td>
<td>Correct = 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Street and town only = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town or street only = ½</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5 Names of three teachers or friends from this school</td>
<td>Each correct name = 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>(Prompts: 'The headteacher?', 'Your form teacher?', 'A friend?')</td>
<td>Each first name only = ½</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maximum = 8

### A2 Recall of an incident occurring while at primary school (age 5–11 years)

(Prompts: 'Involving a teacher?', 'Involving a friend?')

<table>
<thead>
<tr>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
### Part 3: Main secondary or high school (i.e. 11–18 years)

<table>
<thead>
<tr>
<th>Question</th>
<th>Scoring details</th>
<th>score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3.1 Name of secondary (or high) school</strong></td>
<td>Correct = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>3.2 Location of this secondary (or high) school</strong></td>
<td>Town or city = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>3.3 Number and level of examinations obtained at secondary school</strong></td>
<td>Correct number and level of qualifications = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>American users: Year of graduation or year of leaving high school</td>
<td>Correct year = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>3.4 Subject’s address whilst attending secondary (or high) school</strong></td>
<td>Correct = 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Street and town only = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town or street only = ½</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3.5 Names of three teachers or friends from secondary (or high) school</strong></td>
<td>Each correct name = 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>(Prompts: ‘The headteacher?’, ‘Your form teacher?’, ‘A friend?’)</td>
<td>Each first name only = ½</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum = 8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### A3 Recall of an incident

(Prompts: ‘Involving a teacher?’, ‘Involving a friend?’)

<table>
<thead>
<tr>
<th>Score</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

### Childhood section summary

<table>
<thead>
<tr>
<th>Section</th>
<th>Personal semantic</th>
<th>Autobiographical incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1: Period before school</td>
<td>Maximum = 5</td>
<td>Maximum = 3</td>
</tr>
<tr>
<td>Part 2: First school</td>
<td>Maximum = 8</td>
<td>Maximum = 3</td>
</tr>
<tr>
<td>Part 3: Main secondary (or high) school</td>
<td>Maximum = 8</td>
<td>Maximum = 3</td>
</tr>
<tr>
<td>Maximum total</td>
<td>21</td>
<td>9</td>
</tr>
</tbody>
</table>
### Section B: Early adult life

#### Part 4: Career

4.1 **Qualification(s) obtained after leaving school**

| Correct recall of qualifications or stating 'No qualifications' = 1 'Don't know' or inaccurate response = 0 | 1 - |  |

4.2 **Either If qualification(s) obtained: name of course and educational institution**

| Name of course = 1 | 2 - |  |
| Name of institution = 1 |  |

**Course**

**Institution**

4.3 **Or If no qualifications obtained: first job**

| Correct = 1 |  |

**and name of firm or organisation**

| Correct = 1 |  |

4.4 **Subject's address while obtaining qualification(s) or in first job**

| Correct = 2 | 2 - |
| Street and town only = 1 |  |
| Town or street only = ½ |  |

4.4 **Names of three friends or colleagues from this period**

(Prompts: 'The Principal' or 'The boss?'; 'The tutor' or 'Your foreman?'; 'Any class-mates' or 'Any work-mates?')

| Each correct name = 1 | 3 - |
| Each first name only = ½ |  |

**Maximum total = 8**

5.4 **Recall of an incident from college or the first job**

(Prompts: 'Your first day at work or college?'; 'An incident with a friend?')

| 3 - |  |
### Part 5: Wedding

#### 5.1 Either if married in the late teens, twenties or early thirties:
- **Date when subject was married**
- **Place where this marriage was held**

#### 5.2 Subject's address before this wedding
- **Correct** = 2
- **Street and town only** = 1
- **Town or street only** = 1/2

#### 5.3 Subject's address after this wedding
- **Correct** = 2
- **Street and town only** = 1
- **Town or street only** = 1/2

#### 5.4 Name of best man from this wedding (or any guest)
- **Correct name** = 1
- **First name only** = 1/2

#### 5.5 Name of bridesmaid from this wedding (or a guest)
- **Correct name** = 1
- **First name only** = 1/2

#### 5.6 Bride's (or own) maiden name (or a guest)
- **Correct name** = 1
- **First name only** = 1/2

#### A5 Recall of an incident from this wedding
(Prompts: 'An incident involving a guest at the wedding?', 'An incident at the reception?')

<table>
<thead>
<tr>
<th>Question</th>
<th>Scoring details</th>
<th>Max score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Correct = 1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year only = 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town or city = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Correct = 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Street and town only = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town or street only = 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Correct = 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Street and town only = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town or street only = 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>Correct name = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>First name only = 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Correct name = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>First name only = 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Correct name = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>First name only = 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum total = 9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total**
**Part 6: Children and meeting someone new in the subject’s twenties**

<table>
<thead>
<tr>
<th>Question</th>
<th>Scoring details</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Name of subject’s first child (or a nephew, niece or child of a close friend)</td>
<td>Correct = 1</td>
<td>1</td>
</tr>
<tr>
<td>6.2 Date of birth of this child (or age of a nephew, niece or child of a close friend)</td>
<td>Correct year = 1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>6.3 Place of birth of this child</td>
<td>Town or city = 1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>6.4 Name of subject’s second child</td>
<td>Correct = 1</td>
<td>1</td>
</tr>
<tr>
<td>(or another nephew, niece or child of a close friend)</td>
<td>Correct year = 1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>6.5 Date of birth of this child (or age of a nephew, niece or child of a close friend)</td>
<td>Correct year = 1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>6.6 Place of birth of this child</td>
<td>Town or city = 1/2</td>
<td>1/2</td>
</tr>
</tbody>
</table>

**Maximum total = 4**

**A6** Recall of a first encounter with someone while the subject was in his or her twenties

(Prompts: 'Meeting someone in an interview?', 'Meeting someone on holiday or at work?')

**Maximum total = 3**

---

**Early adult life section summary**

<table>
<thead>
<tr>
<th>Section</th>
<th>Personal semantic</th>
<th>Autobiographical incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 4: Career</td>
<td>Maximum = 8</td>
<td>Maximum = 3</td>
</tr>
<tr>
<td>Part 5: Wedding</td>
<td>Maximum = 9</td>
<td>Maximum = 3</td>
</tr>
<tr>
<td>Part 6: Children and meeting someone new</td>
<td>Maximum = 4</td>
<td>Maximum = 3</td>
</tr>
<tr>
<td><strong>Maximum total = 21</strong></td>
<td></td>
<td><strong>Maximum total = 9</strong></td>
</tr>
</tbody>
</table>
**Section C: Recent life**

### Part 7: Present hospital or institution

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7.1 Name of hospital or place where seen</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7.2 Location of this hospital or institution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7.3 Date of arrival at this hospital or institution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7.4 Subject's current address</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7.5 Names of three staff members or fellow patients from this hospital or institution (or three current neighbours or colleagues)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Scoring details**

- Correct = 1
- Town or city = 1
- Month or year = 1
- Each correct name = 1
- Each first name only = 1/2

**Maximum total = 8**

### A7. Recall of an incident which has occurred at this hospital or institution

*(Prompts: 'Involving the other patients?', 'To do with the doctors or nurses?' or two other appropriate prompts e.g.: 'Involving the warden?', 'Involving the daily care staff?', 'Involving the social worker?', 'Involving the psychologist?')*

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
### Part 8: Previous hospital or institution

<table>
<thead>
<tr>
<th>Question</th>
<th>Scoring details</th>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Name of previous hospital or institution, or name of last hospital visited (which must be from the last 5 years)</td>
<td>Correct = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town or city = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8.2 Location of this hospital or institution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town or city = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8.3 Date of arrival (or visit) at this hospital or institution</td>
<td>Month or year = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correct = 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Street and town only = 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town or street only = ½</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.4 Subject’s address when attending (or visiting) this hospital or institution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Each correct name = 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Each first name only = ½</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum total = 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Question 8A

Recall of an incident involving a relative or visitor in the last year

*Prompts: 'A visit by or to a relative?', 'Involving some news about a relative?*
### Part 9: Last Christmas or Thanksgiving

<table>
<thead>
<tr>
<th>Question</th>
<th>Scoring details</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1 Place where subject spent last Christmas or Thanksgiving</td>
<td>Correct = 1</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>9.2 Name of a person with whom subject spent last Christmas or Thanksgiving</td>
<td>Correct name = 1, First name only = $\frac{1}{2}$</td>
</tr>
<tr>
<td></td>
<td>Maximum total = 2</td>
</tr>
</tbody>
</table>

### Part 10: Holiday or journey

<table>
<thead>
<tr>
<th>Question</th>
<th>Scoring details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Place where subject visited on a holiday or a journey in the last year (or holiday or journey within the last 5 years)</td>
<td>Correct = 1</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>10.2 Month (or year) in which this holiday or journey took place</td>
<td>Month or year = 1</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>10.3 Name of a person with whom the subject went on this holiday or journey</td>
<td>Correct name = 1, First name only = $\frac{1}{2}$</td>
</tr>
<tr>
<td></td>
<td>Maximum total = 3</td>
</tr>
</tbody>
</table>

A9 Recall of an incident which took place while on any holiday or journey within the last 5 years (Prompts: 'At the place you visited?', 'Involving someone you met?')

<table>
<thead>
<tr>
<th>Question</th>
<th>Scoring details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### Recent life section summary

<table>
<thead>
<tr>
<th>Part 7: Present hospital or institution</th>
<th>Personal semantic</th>
<th>Autobiographical incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum = 8</td>
<td>Maximum = 3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part 8: Previous hospital or institution</th>
<th>Personal semantic</th>
<th>Autobiographical incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum = 8</td>
<td>Maximum = 3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part 9: Last Christmas or Thanksgiving</th>
<th>Personal semantic</th>
<th>Autobiographical incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum = 2</td>
<td>Maximum = 3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part 10: Holiday or journey</th>
<th>Personal semantic</th>
<th>Autobiographical incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum = 3</td>
<td>Maximum = 3</td>
<td></td>
</tr>
</tbody>
</table>

Maximum total = 21

Maximum total = 9
<table>
<thead>
<tr>
<th>Total score summary</th>
<th>Personal semantic</th>
<th>Autobiographical incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section A: Childhood</strong></td>
<td>Maximum = 21</td>
<td>Maximum = 9</td>
</tr>
<tr>
<td><strong>Section B: Early adult life</strong></td>
<td>Maximum = 21</td>
<td>Maximum = 9</td>
</tr>
<tr>
<td><strong>Section C: Recent life</strong></td>
<td>Maximum = 21</td>
<td>Maximum = 9</td>
</tr>
<tr>
<td>Maximum total = 63</td>
<td>Maximum total = 27</td>
<td></td>
</tr>
</tbody>
</table>