Personality Correlates of Dissociation: Benign Characteristics or Predilections to Mental Illness?

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ABSTRACT

The purpose of this study was to examine dissociative experiences and general mental health in a non-clinical population and to determine how the associated personality characteristics of fantasy proneness and absent-mindedness impacted on this relationship. A self-report questionnaire consisting of the Dissociative Experiences Scale (DES), the Creative Experiences Questionnaire (CEQ), the Cognitive Failures Questionnaire (CFQ), and the General Health Questionnaire (GHQ-12) was administered to a sample of 96 volunteer university students, most of who were enrolled in undergraduate psychology courses. Positive and significant correlations were found between all four of the variables of interest; the most robust relationships being between dissociative experiences and fantasy proneness on the one hand, and dissociative experiences and absent-mindedness on the other hand. With the exception of absent-mindedness, with Asians scoring lower than both NZ European and Maori, there were no significant differences between ethnic groups, or between men and women, on any of the other variables. Consistent with previous research, age was found to be inversely related to both dissociative experiences and absent-mindedness. A hierarchical regression analysis revealed that dissociative experiences and absent-mindedness were both directly predictive of poor general mental health. However, when the variance associated with fantasy proneness was extracted, only absent-mindedness continued to make a unique contribution to general mental health scores. In conjunction with previous studies, these findings suggest that the so-called "benign" phenomenon of fantasy proneness is an artefact of dissociative experiences as indexed by the DES. Although this suggests that there may be limitations to the DES's utility as a screening instrument for dissociative pathology, further systematic study is clearly warranted in this area.

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CHAPTER ONE: INTRODUCTION AND RATIONALE

1.1 Introduction

1.1.1. Introduction

The last twenty years has witnessed a resurgence of interest in the phenomena of dissociation. In the last decade, no other area within clinical psychology has engendered as much contention as dissociation and the dissociative disorders (e.g. Cohen, Berzoff, & Elin, 1995; Merskey, 1995). As a result, there has been a significant increase in the amount of research and case reports conducted in this area. Most of this research has focused on the relationship between dissociation and measures of childhood trauma, as well as various measures of symptomatology and psychopathology.

Although a history of childhood trauma and abuse has been associated with several different psychiatric complaints, several researchers (e.g. Braun, 1984; Kluft, 1985; Putnam, 1986; van der Kolk, 1987) have found traumatic experiences to be specifically linked to the development of dissociative disorders. For example, Putnam (1986) found that out of a sample of 100 individuals with multiple personality disorder, 97% reported past episodes of childhood abuse. Additionally, surveys conducted on individuals with a range of psychiatric illnesses (e.g. Putnam et al., 1996; Rauschenberger & Lynn, 1995; Saxe et al., 1993) indicate that roughly 25% of the clinical population exhibit elevated levels of dissociative tendencies. With regards to the prevalence of dissociative experiences in non-clinical populations, survey results (e.g. Mulder et al., 1998; Putnam et al, 1996; Ross, Joshie, & Currie, 1990) estimate that about 5-6% experience extremely high levels.

Despite extensive research in this area, there are still major gaps in the literature regarding the relationship between dissociative experiences and a whole host of related variables, including; childhood trauma and abuse, various psychopathologies, and personality characteristics such as fantasy proneness and absent-mindedness. The interrelationships between dissociative experience, fantasy proneness and absent-mindedness, as well as each

phenomenon's relative contributions to predicting psychological distress are among the primary objectives of the current study.

1.1.2. Purposes of the Present Study

1. To examine the relationship among dissociative experiences, fantasy proneness, absent-mindedness and general mental health.
2. To ascertain whether age, gender and/or cultural differences exist in dissociative experiences, fantasy proneness and absent-mindedness.
3. To assess the commonalities between the scales used to measure dissociative experiences, fantasy proneness, and absent-mindedness.

1.1.3. Rationale for the Present Study

The present study aimed to examine the relationship among dissociative experiences, fantasy proneness, absent-mindedness and general mental health. Previous research has been inconsistent and inconclusive with regards to the interrelationships among these three phenomena and how each relates to poor mental health (i.e. psychopathology). There has been much controversy within the current literature as to whether heightened dissociative experiences are in fact indicative of a history of childhood trauma and subsequent dissociative pathology, given clinical and non-clinical findings of there being robust correlations between dissociative experiences and the "so-called" benign personality traits of fantasy proneness and absent-mindedness. Additionally, several researchers (e.g. Cardena, 1994; Frankel, 1990; Ross, 1989; Singer & Sincoff, 1990) have criticised the current conceptualisation of dissociation for being too vague and too broadly defined.

As of yet, there does not appear to be any research that has focused specifically on exploring the interrelationships among all three of these variables, and how they relate (whether in isolation or combination) to general mental health. Thus, in questioning the assumption that the personality correlates of dissociation are benign, the current study aimed to examine these relationships to determine whether high levels of these phenomena are independently related to poor mental health scores, or conversely, whether robust correlations among these variables are more the result of profound overlapping between the

scales used to measure these three phenomena. In other words, are high levels of fantasy proneness indicative of a predilection or vulnerability to mental illness, or are they merely incidental artefacts of dissociation brought about by overlapping in item content? In addition, given a lack of research in these areas, the present study sought to determine whether any age, gender, or cultural differences exist in these three phenomena.

In keeping with previous research, several hypotheses were made. In particular, it was hypothesised that all three of the independent variables (dissociative experiences, fantasy proneness, and absent-mindedness) would be directly related to one another. With regards to gender differences, it was hypothesised that females would have higher levels of overall absent-mindedness than males. It was hypothesised that there would be no gender differences with regards to dissociative experiences and fantasy proneness. With regards to age differences, it was hypothesised that both dissociative experiences and absent-mindedness levels would systematically decrease with increases in age. Although it was hypothesised that there would be no cultural differences in fantasy proneness or absent-mindedness, in line with previous research by Barker-Collo (1994) it was hypothesised that there would be significant cultural differences in the degree of dissociative experiences within the New Zealand sample tested in the current study. Specifically, it was hypothesised that NZ European/Pakeha would have lower levels of dissociative experiences than Māori, who in turn would have lower levels of dissociative experiences than Asian individuals.

CHAPTER TWO: LITERATURE REVIEW

2.1. Definitions

Given the diversity of literature reviewed and the various types of terminologies utilised, conceptual definitions will serve as a preface to this chapter.

2.1.1. Dissociation

Dissociation is typically defined as "the lack of normal integration of thoughts, feelings, and experiences into the stream of consciousness and memory" (Bernstein & Putnam, 1986:727). A similar definition of dissociation is provided by the Diagnostic and Statistical Manual of Mental Disorders, (DSM-IV) which also states that this disruption of normally integrated functions of memory and consciousness "may be sudden or gradual, transient or chronic" (American Psychiatric Association, 1994:477). Although dissociation typically occurs outside the realm of conscious control and dissociated memories appear to be unavailable, dissociated experiences (i.e. cognitions, behaviours, emotions) may have some influence on non-dissociated (i.e. tangible) aspects of behaviour and experience (Spiegel & Cardena, 1991).

Examples of dissociative phenomena include: *derealisation*, where objects in the external world are perceived as strange and unreal, *depersonalisation*, where the body or personal self is perceived as strange and unreal (i.e. detachment), *dissociative amnesia*, being unable to recall information, typically related to a stressful or traumatic event, which can not be explained by ordinary forgetfulness, and *dissociative identity disorder* (DID; formerly referred to as multiple personality disorder), where two or more distinct personalities appear to be present in a single person (DSM-IV, American Psychiatric Association, 1994; Saddock & Saddock, 2003; Kihlstrom, Glisky, & Angiulo, 1994).

Since the early writings of Pierre Janet (1906-1907) and Morton Prince, (cf. van der Kolk, 1987) dissociation has been regarded as a defence against past episodes of trauma and to be symptomatic of subsequent mental pathology; particularly with regards to disorders with a

dissociative component, such as DID, post-traumatic stress disorder (PTSD), borderline personality disorder, and bulimia (e.g. Bernstein & Putnam, 1986; Holtgraves & Stockdale, 1997; Spiegel & Cardena, 1991; van der Kolk, 1987). However, in keeping with historical accounts (e.g. Hilgard, 1977; Prince, 1909/1975) regarding the dissociation concept, dissociative states have also been regarded as lying along a continuum and thus, are presumably not limited to mental pathology (cf. Holtgraves & Stockdale, 1997). In other words, whereas the more serious pathological forms of dissociation (i.e. DID) lie at the extreme end of the continuum, the more mundane, everyday, non-pathological forms of dissociation (i.e. daydreaming) can be found at the low end of the scale (Bernstein & Putnam, 1986).

Consistent with this notion of dissociation, is the contention that it is the frequency, intensity, and extent of dissociative symptoms, rather than any one particular symptom that distinguishes between normal and pathological personality (Kihlstrom et al., 1994). In addition to the view that dissociative states can be ordered in this manner, Bernstein and Putnam (1986) believe that individual's themselves can be placed along this dissociation continuum. To date however, this contention and the processes that identity these underlying components have yet to be systematically tested (Holtgraves & Stockdale, 1997; Ray, June, Turaj, & Lundy, 1992).

On the other hand, there is some tentative support from retrospective, self-report research (e.g. Braun, 1989; Hilgard, 1977; Putnam, 1989b; Sandberg & Lynn, 1992; Spiegel, 1986; cited by Sandberg & Lynn, 1992) that a continuum of dissociative states exists. For example, Sandberg and Lynn (1992) found that the degree of dissociative experiences was associated with the level of maladjustment, maltreatment, and psychopathology reported by non-clinical undergraduate students. Hence, this research demonstrates that even less severe dissociative experiences (i.e. those reported by non-clinical populations) can be related to psychopathology.

Although support for the concept of a dissociative continuum appears promising, Hilgard's (1977) hypothesis has not escaped criticism. In particular, several researchers (e.g. Cardena,

1994; Frankel, 1990; Ross, 1989; Singer & Sincoff, 1990; cited by Gershuny & Thayer, 1999) have argued that the concept of dissociation is too broadly defined and lacks clarity. For example, most theorists and researchers regard dissociation to be a multidimensional phenomenon yet, as Frankel (1990) argues, even though the most commonly utilised self-report method of measuring dissociation (i.e. the Dissociative Experiences Scale (DES); Bernstein & Putnam, 1986) is comprised of a broad range of diverse dissociative experiences, it appears to treat dissociation as if it were a unitary phenomenon. Moreover, after closer inspection of the 28 items used in the scale, Frankel (1990:827) argued "that about two-thirds of the items can be readily explained by the manner in which subjects recall memories, apply or redistribute attention, use their imagination, or direct or monitor control". Thus, as Frankel (1990) states, the assumption that dissociation exists on a continuum is still very much open for debate. Moreover, the possibility that qualitative differences do in fact exist between individuals with high and low levels of dissociation is yet to be discounted.

Germane to Frankel's (1990) contention that the concept of dissociation is too vague and has been too broadly defined, van der Kolk and Fisler (1995) state that the concept of dissociation is currently used to explain four independent, yet interrelated phenomena. Only one of these phenomena however, includes the progressive, trait-like dissociative tendencies (i.e. depersonalisation, "spacing out") experienced in everyday life that are typically measured by the DES. Moreover, as van der Kolk and Fisler (1995) point out, the precise nature of the interrelationships among these distinct phenomena still remains unclear.

In addition, Cardena (1994) has expressed the viewpoint that in order for dissociation to be useful as a concept, it should not be applied to everyday occurrences of less than total engagement with one's environment, actions, and experiences. In other words, as Frankel (1996:65) states, dissociative states such as "depersonalisation, derealisation, and dissociative amnesia might reflect events that are qualitatively different from automatic and daily behaviours such as bicycle riding or engaging in discussion and reverie while driving an automobile on the highway".

The particular line of reasoning espoused by Cardena (1994) and Frankel (1996) here is that a distinction needs to be made between *partial* degrees of dissociation, a disruption that is not completely out of conscious control, and *total* dissociation, where disruption is completely involuntary. As Frankel (1996:65) states, the recognition of these distinctions is imperative for a number of reasons. In particular, it is highly relevant to the current memory debate regarding whether traumatic events can remain totally absent from memory only to be recovered years later, either during psychotherapy or "moments of reverie".

Moreover, an acknowledgement of this distinction is pertinent to understanding the dramatic manifestation of multiple personalities (i.e. DID) in psychotherapy. Given that this type of behaviour is generally regarded to be attributed to another part of the person (i.e. a separate identity) whether this disconnection between identities is total or partial could have major implications for clinicians (Frankel, 1996). For instance, if total, clinicians are then forced to confront the question of who is responsible for the individual's behaviour, which may involve violent acts towards the self or others (Halleck, 1990; cited by Frankel, 1996).

2.1.2. Fantasy Proneness

Fantasy proneness simply refers to an individual's degree of everyday involvement in fantasy, daydreaming, and imagination. (Lynn & Rhue, 1986, 1988). The so-called "fantasy-prone personality" was unexpectedly discovered by Wilson and Barber (1981) during an intensive-interview study on highly hypnotic subjects. In analysing their information, Wilson and Barber (1981) found a group of individuals who appeared to share a unique collection of experiences and personality characteristics brought about by a deep, profound, and long-term involvement in imagination, daydreaming, and fantasy (cited by Lynn & Rhue, 1988).

Wilson and Barber (1981, 1983) speculated that for those individuals that sat near the extreme end of the fantasy proneness continuum, (i.e. fantasiers, fantasy addicts, or the fantasy-prone personality) intense imaginative or fantasy involvement may serve as an adaptive coping strategy (cited by Lynn & Rhue, 1988). Daily involvement in fantasy, daydreaming and imaginative play are in fact regarded to be integral to healthy

psychological functioning (Rauschenberger & Lynn, 1995). In studies carried out by Klinger (1969) and Singer (1983; cited by Rauschenberger & Lynn, 1995) for example, it was found that fantasy and daydreams tend to highlight current issues, organise experiences, facilitate learning, regulate mood, provide important (self-relevant) information about the self, and aid decision making.

Based on their preliminary study findings, Wilson and Barber (1981, 1983) estimated that the "fantasy-prone personality" was evident in about 4% of the population (cited by Lynn & Rhue, 1988). Some common features of the "fantasy-prone personality" include: difficulty distinguishing between fact and fantasy, paranormal (i.e. telepathic) and out-of-body experiences, intense religious experiences, strong physical manifestations and concomitants of fantasies, and experiencing fantasies with vivid hallucinatory (i.e. 'real as real') intensities (Merckelbach, Horselenberg, & Muris, 2001; Rhue & Lynn, 1987a).

Research carried out by researchers such as Hilgard, (1970, 1974) Wilson and Barber, (1983) and Rhue and Lynn (1987a) collectively indicate that extreme fantasy proneness in adulthood is largely the result of one of two major childhood developmental pathways: (a) being encouraged to fantasise by a significant adult; and (b) fantasising in order to cope with loneliness and isolation, and to escape from an aversive environment ((e.g. harsh or punitive punishment, child abuse), cf. Rhue & Lynn, 1987a; Rhue, Lynn, Henry, Buhk, & Boyd, 1990-91). Although some overlap exists between these two pathways, Lynn and Rhue (1988) found encouragement and severe punishment to be essentially independent antecedents to fantasy proneness.

Not only do fantasy prone individuals differ greatly with regards to developmental history, there is evidence in the literature that fantasisers vary significantly on a host of other cognitive, affective, and behavioural dimensions. For example, whilst a majority of fantasisers have been found to be highly hypnotisable, others have not (e.g. Huff & Council, 1984; Lynn & Rhue, 1986). Moreover, although some fantasisers are able to visually hallucinate a suggested object "as real as real", most are not (Rhue & Lynn, in press; cited by Lynn & Rhue, 1988). Even when hypnotisability was compared to

hallucinatory ability (e.g. Spanos, 1986; Stanley, Lynn, & Nash, 1986), it was not found to predict one's ability to hallucinate objects realistically. Similarly, several studies (e.g. Lynn & Rhue, 1986, 1988; Rhue & Lynn, 1987a, 1987b, 1989) have shown that fantasy prone individuals differ with regards to psychological adjustment (see Section 2.7 for a more in-depth review of study findings in this regard).

Findings such as these suggest that fantasy prone individuals do not belong to an homogenous group and have lead Lynn & Rhue (1987) to argue that Wilson & Barber's (1981, 1983) original contention that fantasy proneness constitutes a unitary personality syndrome, is misleading and inaccurate.

Fantasy proneness has also been found to be associated with a variety of other phenomena. In particular, robust correlations have been obtained between fantasy proneness and a number of paranormal experiences, such as; UFO encounters (e.g. Spanos, Cross, Dickson, & DuBreuill, 1993) and "out of body" experiences (e.g. Council & Huff, 1990; Irwin, 1991; Myers & Austrin, 1985). Additionally, several studies have found significant overlaps between fantasy proneness and traits such as; schizotypy, (e.g. Lynn & Rhue, 1988; Merckelbach, Rassin, & Muris, 2000c; Rhue & Lynn, 1987b) absorption, (e.g. Merckelbach, , Muris, Schmidt, Rassin, & Horselenberg, 1998; Lynn & Rhue, 1986) and suggestibility (e.g. Lynn & Rhue, 1986; Silva & Kirsch, 1992).

2.1.3. Absent-mindedness (cognitive failures)

Absent-mindedness refers to the everyday cognitive lapses and slips (perceptual, memory or action based) that occur when our intended actions fail to go according to plan. Furthermore, cognitive failures or errors are said *not* to be the result of chance occurrences (i.e. unlucky accidents). Rather, they most frequently occur when people are engaged in everyday habitual tasks that are normally completed with ease. In other words, cognitive failures are not the result of a novice's incompetence, but *misapplied competence* when engaging in a highly skilled or habitual activity that one has total mastery of (e.g. making a hot drink, getting dressed or changed, leaving the house). In fact, the more proficient one is

at a particular task, the greater the probability of making such a slip (Reason & Mycielska, 1982).

Additionally, as embarrassing or inappropriate as these errors may be to the individual, they do not exist outside the realm of our everyday personal repertoire of actions. In other words, they do not defy reason or logic (Reason & Mycielska, 1982). For example, findings from Reason's (1977, 1979; cited by Reason & Mycielska, 1982) preliminary diary study on the different types of absent-minded slips that people typically make, indicate that some of the most common activities productive of these kinds of errors are the simplistic act-wait-act-wait tasks – such as making a cup of tea. Common errors involved here include: unnecessarily repeating the boiling sequence, forgetting to put tea in the pot, and pouring the tea into the sugar bowl (Reason & Mycielska, 1982). Moreover, based on initial analyses carried out using the Error Proneness Questionnaire (EPQ; Reason, 1977, 1979), Reason (1977, 1979) found that memory or non-action type failures (e.g. forgetting to put tea in the pot) were significantly more common than action failures (cited by Reason & Mycielska, 1982).

Based on Reason's (1977, 1979) preliminary studies, Reason and Mycielska (1982:21) postulated that absent-minded slips appear to depend on at least three conditions:

1. Absent-mindedness occurs whilst engaged in well-learned or routine tasks. Because habitual tasks do not tend to require continuous or large amounts of attention, our execution of these actions become largely automated
2. Absent-mindedness appears to be related to preoccupation or distraction. In other words, slips occur when our attention is focused on some internal or external matter that is not directly related to the ongoing activity
3. Absent-mindedness appears to thrive in environments that are relatively familiar to us (e.g. home, work). And because very few departures from the norm are anticipated in familiar environments, limited amounts of outward vigilance are required.

Reason (1988) further stated that absent-mindedness was an enduring trait-like construct, and empirical studies (e.g. Broadbent, Cooper, Fitzgerald, & Parkes, 1982) have provided support for this assertion (i.e. absent-mindedness has been found to have high test-retest reliability). Moreover, findings from research conducted on the dimensions and correlates of absent-mindedness (e.g. Wallace, Kass, & Stanny, 2002; Wallace & Vodanovich, 2003a) indicate that some people are more prone to making absent-minded slips than others.

Additionally, Reason (1988) postulated that 'absent-minded' individuals may be more rigid than others in their attentional focus. And, this inflexibility in cognitive management style may ultimately lead to cognitive breakdowns given an inability to effectively manage concurrent and intervening stimuli. For instance, people prone to absent-mindedness may have difficulty performing well during novel and dynamic situations because they fail to 'take in' or are unaware of incoming information that exceeds their attentional processing capabilities (Heckhausen & Beckmann, 1990). Moreover, given that accidents are typically found to be the result of ineffective cognitive/attentional processes; such as distractibility, mental errors, and poor selective attention, (e.g. Arthur, Barrett, & Alexander, 1991; Hansen, 1989) it follows that absent-mindedness might also be significantly related to accidents and unsafe behaviours (Wallace & Vodanovich, 2003b).

Although research on absent-mindedness is far from complete, several of the above postulations have been systematically tested and the results are in accordance with those suggested by Reason and Mycielska (1982) and Reason (1988). For example, Martin and Jones (1983) found that an individual's susceptibility to absent-mindedness does seem to be dependent on the degree of difficulty that one experiences when attempting to distribute their attention across varying sources of information (i.e. multitasking). Moreover, in a later study, Jones and Martin (2003) found that high levels of absent-mindedness also appear to be the result of having one's attention distracted by extraneous environmental cues. These findings are also consistent with empirical research findings on the attentional underpinnings of absent-mindedness in relation to laboratory measures of divided and sustained attention (e.g. Larson & Perry, 1999; Roberts, Hager, & Heron, 1994; Robertson, Manly, Andrade, Baddeley, & Yiend, 1997).

With regards to the relationship between absent-mindedness and accidents, several studies (e.g. Larson, Alderton, Neideffer, & Underhill, 1997; Wallace & Vodanovich, 2003a, 2003b) have indeed found that high levels of absent-mindedness are significantly associated with 'actual' accidents and unsafe behaviours. These findings are therefore consistent with other indirectly related studies (e.g. Arthur et al., 1991; Hansen, 1989) indicating that many accidents result from distractibility, mental errors, and poor selective attention.

2.1.4. General Mental Health

General mental health refers to the overall psychological health or well-being of an individual. In this study, the General Health Questionnaire (GHQ-12; Goldberg, 1978) was used as a measure of general mental health. Increasing scores on scales that measure general aspects of mental health tend to be indicative of greater levels of psychological distress, illness, or maladjustment. Moreover, very high scores suggest that the individual or subgroup in question is either currently suffering from a mental illness or is at increased risk of suffering from one (Goldberg & Williams, 1988). Although a general picture of overall mental health is provided by scales like the GHQ, specific information on distinct types of mental illnesses (e.g. depression, anxiety, schizophrenia, dissociative disorders) are not (Goldberg & Williams, 1988).

2.2. Measuring Dissociation

The purpose of this section is to explore the psychometric properties, dimensions, and distribution of dissociative experiences as measured by the Dissociative Experiences Scale (DES). An assessment of the psychometric properties of each of the three measures used in this study, (measures of fantasy proneness and absent-mindedness will be discussed in the next subsection) along with any commonalities between them is essential in determining whether or not they are actually measuring three valid and distinct psychological phenomena. This section will also explore whether any gender, age or cultural differences exist in terms of the degree of dissociation experienced.

2.2.1. Dissociative Experiences Scale (DES)

Dissociation (particularly trait-like dissociation) is typically measured using the Dissociative Experiences Scale (DES) developed by Bernstein and Putnam in 1986. The DES is a brief 28-item self-report scale that measures the frequency of dissociative phenomena in every-day life. For each question, subjects are required to indicate on a 100mm line where they fall on that particular continuum (Bernstein & Putnam, 1986). The DES is the most extensively validated and utilised measure of dissociation (Sandberg & Lynn, 1992) in both clinical and non-clinical populations (Ray et al., 1992).

According to Bernstein and Putnam (1986), the DES was developed as a means of reliably assessing dissociation in both clinical and non-clinical populations. Carlson and Putnam (1993) however, state that although it has typically been used to assess dissociation in normal (non-clinical) populations, this is not what it was originally designed for. Rather, its intended purpose is as a screening instrument for dissociative disorders, (including PTSD which has a major dissociative component) and to determine the extent of dissociative input to various other psychiatric illnesses. For this reason, Carlson and Putnam (1993) advise researchers to be cautious when using the DES with normal populations. Additionally, given that most normal populations tend to score at the low end of the DES scale, and within a fairly limited range, small differences may not be meaningful between these sample populations (Carlson & Putnam, 1993).

Another important cautionary with regards to the DES, is that it is not intended to be used as a diagnostic instrument. In other words, high scores on the DES do not automatically imply that an individual has a dissociative disorder. Although cut-off scores do provide some information about an individual's likelihood of meeting the criteria of a psychiatric diagnosis with a dissociative component, researchers and clinicians need to use diagnostic tools when a specific dissociative diagnosis is necessary, such as extensive one-to-one interviews designed for detecting dissociative disorders (Carlson & Putnam, 1993).

With regards to reliability, several researchers (e.g. Bernstein & Putnam, 1986; Carlson & Putnam, 1993; Fischer & Elinitsky, 1990; Frischholz et al., 1990; Pitblado & Sanders,

1991) have found the DES to have adequate test-retest reliability and internal reliability (see Methodology section for a more detailed report of these findings).

In terms of the predictive validity of the DES, several studies (e.g. Armstrong & Loewenstein, 1990; Bernstein & Putnam, 1986; Carlson et al., 1993; Frischholz et al., 1990; Putnam et al., 1996; Ross, Norton & Anderson, 1988) have demonstrated it to be successful in diagnosing people with dissociative identity disorder (DID), other dissociative disorders, borderline personality disorder (BPD), and post-traumatic stress disorder (PTSD). In other words, people with these disorders tend to score consistently higher on the DES than normal adults, college students or psychiatric patients with other diagnoses. Therefore, these findings suggest that the DES has good construct validity when it comes to measuring dissociative psychopathology as those expected to score high on the DES do so and vice versa (Carlson & Putnam, 1993).

2.2.2. *Factors of Dissociative experiences*

Despite its satisfactory internal consistency, the DES is not perfectly homogenous as conflicting results have been found with regards to its factorial structure. For example, a large sample (n=1574) study conducted by Carlson et al (1991) indicated three underlying dimensions: amnesia (and other dissociative states), absorption-imaginative involvement, and depersonalization-derealization. Although several studies have replicated this factorial structure (e.g. Ross et al., 1991; Sanders & Green, 1994; Schwartz & Frischholz, 1991) a study conducted by Ray and others (1992) suggested the existence of up to seven separate factors measured by the DES. In contrast, Fischer and Elnitsky (1990) were only able to identify one single factor that was reliable and replicable in a factor analysed DES study utilising a relatively large non-clinical (college-student) sample. In addition, when Waller, Quinton, and Watson (1995) reanalysed Carlson et al's (1991) large study, only a single factor was found when the skewness of the responses to the items were controlled for. Likewise, results from Holtgraves and Stockdale's (1997) factor analytic study also indicate that the DES is assessing a single dimension of dissociation. Although there are inconsistent results regarding the factorial structure of the DES, most of the current researchers' in this area (e.g. Candel, Merckelbach, & Kuijpers, 2003; Merckelbach, Muris,

& Rassin, 1999) seem to assume the existence of the three factors originally obtained by Carlson et al (1991).

2.2.3. Distribution of Dissociative Experiences

In a large (n=1055) randomised sample of non-clinical adults, Ross, Joshi, and Currie (1990) found that the distribution of DES scores were extremely positively skewed. In other words, the majority of respondents indicated dissociative tendencies occurring 10% of the time or less. This is consistent with Bernstein and Putnam's (1986) initial pilot testing findings of the scale on a smaller sample of normal adults. Although the DES lacks normality, scores are continuous with no sudden breaks or signs of bimodality (Kihlstrom et al., 1994).

2.2.4. Effects of Gender, and Status

Although research examining the effects of demographic and clinical variables on the DES is limited, it appears to have good discriminant validity given that it has not been found to correlate with a range of variables expected to be unrelated (Kihlstrom et al., 1994). For example, no differences have been found among different socioeconomic groups with regards to DES scores, nor have any gender differences been found (Bernstein & Putnam, 1986; Johnson, Edman, & Danko, 1995; Ross, Joshie, & Currie, 1990; Spitzer et al., 2003). Ross and colleagues (1990) also found the DES to be unrelated to employment status, income level, religious affiliation, and education level.

2.2.5. Age differences

An inverse relationship has however, been found between the DES and age (Bernstein & Putnam, 1986; Ross, Ryan, Anderson, Ross, & Hardy, 1989; Ross et al., 1990; Spitzer et al., 2003). For example, Bernstein & Putnam (1986) obtained a mild but negative association of -0.19 between the DES and age. Moreover, Ross and colleagues (1990) obtained a more modest negative correlation of -0.23 between the DES and age. In other words, the degree of dissociative experiences reported tends to systematically decrease with increases in age.

Moreover, although, as expected, adults from the general population tend to score relatively low on the DES, there is a tendency for late adolescents and young adults (i.e. high school and university students) to obtain scores akin to those found in psychiatric populations (e.g. Anguilo & Kihlstrom, 1993; Frischholz et al., 1991; Frischholz, Braun, et al., 1992; Kihlstrom et al., 1994; Merckelbach et al., 1999). For example, Frischholz and colleagues (Frischholz et al., 1991; Frischholz, Braun, et al., 1992) obtained an overall mean DES score of more than 20 in a sample of university students. Moreover, Merckelbach et al (1999) found that 30% of their undergraduate sample had DES scores greater than 30 in one study, and 22% scored more than 30 in a second study. This is consistent with earlier research findings that high levels of dissociation are common in college-age students (e.g. Dixon, 1963; Myers & Grant, 1970; cited by Carlson & Putnam, 1993).

Carlson and Putnam (1993) have proposed three possible reasons why younger people tend to obtain higher scores on the DES:

1. They experience more dissociative phenomena.
2. They are more likely or willing to report these tendencies.
3. They are more likely to regard their experiences as being synonymous with those listed in the DES items.

It is not yet clear which one of these explanations is most probable. However, given similar findings with other measures of psychopathology, (e.g. the MMPI) it may well be the case that younger adults do in fact experience more dissociative phenomena. In other words, like schizophrenic pathology (e.g. DeLisi, 1992), dissociative symptoms may be more chronic and pervasive in younger adults, and as a result, the disorders they give rise to tend to reach their peak severity during this time. Alternatively, in line with Carlson and Putnam's (1993) second explanation, Elzinga, Bermond, & van Dyck (2002) found that the degree of dissociative experiences was negatively related to social desirability in a study comprised of 833 undergraduate students. On the one hand, this finding suggests that people with high levels of dissociative experiences are less likely to give socially desirable responses. On the other hand, and more specific to the current explanation, this finding suggests that people

who tend toward socially desirable responses may reduce or deny the extent of their dissociative experiences.

Thus, perhaps there is also a relationship between age and social desirability; such that older individuals are more likely to responding in a socially desirable manner and therefore fail to accurately endorse items on the DES? Whilst each of these explanations need not be mutually exclusive, clearly further research is warranted in this area.

In any case, as Kihlstrom et al (1994) states, it is imperative that caution is applied when interpreting the meaning of high scores on the DES as most norms and cut-points on psychological measures are derived from adult populations as opposed to the large number of younger adults typically found in undergraduate student samples.

2.2.6. Cultural differences

With regards to cultural differences in dissociative phenomena, current results in the literature are mixed and inconclusive. For example, no differences have been found in the DES scores of English, (DeSilva & Ward, 1993) Scottish, (Bauer & Power, 1995) or Puerto Rican (Martinez-Taboas, 1995) student populations when compared to the DES scores of Northern Americans (Barker-Collo, 2001). Moreover, in exploring possible cultural differences within a North American sample of post-combat subjects with PTSD, Branscomb (1991) found no significant differences between Caucasian and African-American people in overall DES score. Results such as these suggest that the dissociative tendencies tapped into by the DES (i.e. amnesia, absorption, and depersonalisation/ derealisation) are not culturally specific (e.g. Steinberg, 2000; cited by Barker-Collo, 2001). Moreover, as Bauer and Power (1995) argue, given that there is an extensive amount of anthropological evidence from non-Western societies documenting a variety of dissociative phenomena, coupled with a lack of needing to depend on western definitions of dissociative tendencies and disorders in non-American societies, dissociative phenomena are experienced universally.

In contrast however, higher DES scores have been reported in Japanese (Tanabe & Ogawa, 1992) and Dutch (Ensink & VanOtterloo, 1989) student samples. Furthermore, mean DES scores reported for a sample of New Zealand females (Romans, Martin, Morris, & Herbison, 1999) were lower than those reported for American (Rosen & Petty, 1994) and Puerto Rican (Martinez-Taboas, 1995) female samples. However, the mean age of the females sampled in Romans et al (1999) New Zealand study was 47 years, whereas both the American and Puerto Rican studies used student samples. Thus, as Barker-Collo (2001) states, given that an inverse relationship is typically found between dissociative experiences and age (e.g. Bernstein & Putnam, 1986; Ross et al., 1989a, 1990; Spitzer et al., 2003), it is possible that the differences in DES score in these latter studies are more a product of age differences than cultural differences.

In a more recent study examining possible cultural differences on the DES, Barker-Collo (2001) compared the DES scores of 137 New Zealand university students with student data obtained in other countries. Additionally, she examined whether there were any cultural differences between different cultural groups found within the New Zealand population. Whilst Barker-Collo (2001) found that the overall DES scores of New Zealand students were comparable to those obtained in North American, Scottish, and English populations (indicating no cultural biases in dissociative experiences), significant differences were found between cultural groups within the sample. Asian individuals had significantly higher DES scores than Māori individuals, who in turn, had higher DES scores than European/Pakeha individuals.

Barker-Collo (2001) concluded that the tendency for Asian and Māori individuals to score higher on the DES is quite possibly a reflection of culturally acceptable behaviours displayed by these groups, rather than being indicative of a higher prevalence of dissociative phenomena within these cultural groups. For example, acknowledging and communicating with one's ancestors is traditionally regarded as acceptable protocol within Māori culture. Thus, a high endorsement of DES items, such as "Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing" is probably culturally acceptable to Māori.

2.2.7. Alternative measures of dissociation

Alternative self-report methods for measuring or screening for dissociative tendencies include: the Perceptual Alteration Scale, (PAS; Sanders, 1986) the Questionnaire on Experiences of Dissociation, (QED; Riley, 1988) the Dissociation Questionnaire, (Vanderlinden, Van Dyck, Vandereycken, & Vertommen, 1991) and the Mini Structured Clinical Interview for DSM-IV Dissociative Disorders (M-SCID-D; Steinberg, Rounsaville, Buchanan, and Cicchetti, 1992).

Factor analytic studies (e.g. Fischer & Elinitsky, 1990; Ray, Faith, & Mathieu, 1992; Ray, June, et al., 1992) have revealed that the PAS and QED share similar factorial structures to those found in the DES. For example, Nadon, Hoyt, Register, and Kihlstrom (1991) obtained strong Pearson correlations of 0.83 and 0.82 between the DES and PAS during two survey sessions with a large sample group. Likewise, Anguilo and Kihlstrom (1993) reported a very high correlation of 0.91 between the DES and QED (cited by Kihlstrom et al., 1994).

The Mini Structured Clinical Interview for DSM-IV Dissociative Disorders (M-SCID-D) is another instrument used for measuring/screening for dissociation. Developed by Steinberg and his colleagues in 1992, it can either be completed in a self-report format or it can be administered by a trained clinician (Kihlstrom et al., 1994). However, as Kihlstrom et al (1994:119) states, "unlike the DES, PAS, or QED, the M-SCID-D is based on the DSM criteria for dissociative disorders and tends to yield a tentative diagnosis that can be confirmed (or ruled out) by the SCID-D". The M-SCID-D thus contains content more heavily focused on *actual* dissociative experiences, rather than normative dissociative experiences, such as imaginative involvement and absorption (Kihlstrom et al., 1994). Despite these differences, an adequately high correlation of 0.86 was obtained between the DES and the self-report version of the M-SCID-D in a study conducted by Angiulo and Kihlstrom (1993). These findings suggest that the DES is a valid and reliable screening tool of dissociative pathology.

The DES has also been found to correlate with constructs related to dissociation, such as the Tellegan Absorption Scale (TAS) and the Ambiguity Intolerance Scale (AIS) (Frischholz et al., 1991). For example, in a sample of 311 university students, Frischholz et al (1991) yielded mild-moderate correlations of 0.39 and 0.24 between the DES and the TAS, and between the DES and the AIS respectively.

Overall, the aforementioned studies provide substantial evidence that the DES has good convergent and discriminant validity. In turn, this suggests that the DES has good construct validity and is therefore, a valid and psychometrically sound measure of dissociative experiences (Carlson & Putnam, 1993; Frischholz et al., 1991).

2.3. Measuring Fantasy Proneness and Absent-mindedness

2.3.1. Measuring fantasy proneness

Traditionally, most research on fantasy proneness relied on the use of one of several versions of the Inventory of Childhood Memories and Imaginings (ICMI). The ICMI is a dichotomous (yes/no) self-report questionnaire adapted from Wilson and Barber's (1981) 103-item Memory, Imagining, and Creativity Interview Schedule. The 52-item version has been the most extensively used ICMI form in recent research on fantasy proneness (e.g. Lynn & Rhue, 1988; Rauschenberger & Lynn, 1995; Rhue & Lynn, 1987a, 1987b; Waldo & Merritt, 2000). Although there is some research indicating that the 52-item ICMI has adequate construct validity and test-retest reliability (e.g. Lynn & Rhue, 1986; Rhue & Lynn, 1987a; 1987b) extensive research on the ICMI's psychometric properties is lacking (Merckelbach, Horselenberg, & Muris, 2001).

Given the paucity of reliability and validity information and an inability to locate various versions of the ICMI, Merckelbach et al (2001) decided to design a new briefer research instrument for measuring fantasy proneness. Fashioned from fantasy proneness characteristics identified in Wilson and Barber's original (1983) paper on fantasy proneness, Merckelbach et al (2001) developed a 25-item dichotomous (yes/no) scale called the Creative Experiences Questionnaire (CEQ). Although this name is rather imprecise, it

was chosen by the researchers' so as to avoid any negative connotations respondents might have to the term "fantasy".

The CEQ has been found to correlate strongly with other measures that tap into important components of fantasy proneness such as; absorption, imagination inflation, dissociative experiences, schizotypy, belief in paranormal events, and suggestibility (e.g. Merckelbach et al., 1998; Merckelbach, Muris, Rassin, & Horselenberg, 2000b; Merckelbach et al., 2000c: Merckelbach et al., 2001; Spanos et al, 1993). For example, Merckelbach et al (1998) obtained a relatively robust correlation of 0.76 between the CEQ and the Tellegan Absorption Scale (TAS; Tellegan & Atkinson, 1974). Moreover, Merckelbach et al (2000c) obtained a moderate-strong correlation of 0.61 between the CEQ and the Claridge schizotypal personality scale (STA; Claridge & Broks, 1984). Given that the CEQ has been found to correlate relatively strongly with several related constructs, demonstrates that it has good convergent validity. Additionally, Merckelbach et al (2001) found that the CEQ correlated strongly ($r = 0.77$) with the 44-item version of the ICMI (the original index of fantasy proneness developed by Wilson and Barber, 1981) which indicates that the CEQ also possesses good concurrent validity.

2.3.2. Factors of Fantasy Proneness

In a relatively large study (n=332) on the dimensionality of the CFQ, (Merckelbach et al., 2001) a principal component analysis revealed that although nine factors accounted for 56% of the variance in CEQ, screeplot investigations indicated that the CEQ appears to measure a single unitary dimension (i.e. fantasy proneness). Although this single factor only accounted for 15% of CEQ variance, each of the 25 items were significantly correlated with the total CEQ score, with only four items yielding corrected item-to-total correlations less than 0.20. As far as the available research is concerned, Merckelbach et al's (2001) factor analysis on the CEQ appears to be the only one conducted to date.

2.3.3. Distribution of Fantasy Proneness

In a study sample consisting of 332 high school students, university students, and university employees, Merckelbach et al (2001) found that CEQ scores were normally distributed (i.e.

skewness = 0.34). Merckelbach et al (2001) also found that there were no age differences in overall CEQ score; nor were there any differences between males (M = 9.2, SD = 4.4) and females (M = 8.7, SD = 4.0) in overall CEQ score ($t < 1.0$).

2.3.4. Measuring absent-mindedness

Absent-mindedness is measured by the Cognitive Failures Questionnaire (CFQ). Developed by Broadbent et al (1982), the CFQ is a brief 25-item self report scale that measures the frequency of everyday minor cognitive slips and errors. For each item, participants indicate how often they have experienced that cognitive failure during the last six month period. All ratings are then summed to give an overall CFQ score.

Extensive interest in the concept of absent-mindedness and the subsequent need to have an instrument to measure its effects arose primarily as a result of extensive research carried out by Reason in 1977 and 1979. Via the initial analysis of accident reports, Reason (1977,1979) progressed to studying the bizarre instances of 'absent-mindedness' recorded by individuals in diaries documenting the course of their everyday lives. The frequency of particular episodes of 'absent-mindedness' were then recorded by Reason (1977, 1979) via the administration of general questionnaires on the subject (cited by Broadbent et al., 1982).

With regards to the CFQ's psychometric properties, it has been found to possess good external validity. For example, Freeman, Weeks, and Kendell (1980) found that former patients of electro-convulsive shock therapy scored higher on the CFQ than 'normal' controls. During initial analyses of the CFQ, Broadbent et al (1982) found that it was not significantly related to standard personality and intelligence tests. These findings collectively indicate that the CFQ has adequate convergent and discriminant validity.

The CFQ has also been found to relate to objective reports of certain types of error in everyday life. For example, Larson and colleagues (e.g. Larson et al., 1997; Larson & Merritt, 1991) found that high CFQ scores were significantly related to past accidents (traffic and personal injuries) and hospitalisations. This suggests that people who

experience cognitive failures on a frequent basis are also susceptible to making more catastrophic errors (Larson et al., 1997; Larson & Merritt, 1991).

A relationship has also been found between the CFQ and specific psychopathologies. In particular, correlations have been obtained between the CFQ and measures of trait anxiety, neuroticism, minor psychiatric complaints, and disordered mood (Broadbent et al., 1992; Matthews & Wells, 1988; Power, 1988).

Additionally, given that the CFQ correlates significantly with related laboratory measures of attention (i.e. sustained and distributed attention), incidental learning, vigilance, and memory constructs concerned with normal everyday activities (e.g. Broadbent et al., 1982; Hermann, 1982; Martin, 1986; Martin & Jones, 1983a, Robertson et al., 1997; cited by Pollina, Green, Tunick, & Puckett, 1992) it appears to be the most promising self-report measure of the frequency of everyday cognitive and memory failures (Hermann, 1982).

The CFQ is most commonly utilised in medical settings to measure everyday cognitive problems experienced by patients (e.g. MacQueen et al., 2002; McKinney et al., 2002; Tzabar et al., 1996; cited by Jones & Martin, 2003) and has been translated for use with both German (e.g. Klumb, 1995) and Dutch (e.g. Merckelbach et al., 1998) populations.

2.3.5. Factors of Absent-mindedness

According to the results of Broadbent et al's (1982) initial factor analysis, the CFQ measures a single 'general' dimension of cognitive failure. However, several subsequent studies (e.g. Matthews, Coyle, & Craig, 1990; Pollina et al., 1992) have obtained conflicting and inconsistent results with regards to the CFQ's factorial structure. For example, in a principal component analysis of the CFQ based on 387 college students, Pollina et al (1992) identified five separate factors: 1. distractibility, 2. misdirected actions, 3. spatial/kinaesthetic memory, 4. interpersonal intelligence, and 5. memory for names. Conversely, based on the CFQ data of 475 students, Matthews et al (1990) obtained four completely different factor structure outcomes (none of which replicated that of Pollina et al (1992)) using four different factor analysis procedures.

Given these disparate findings, Matthews et al (1990) speculated that an insufficient number of items might explain the CFQ's inability to measure more than two strongly defined dimensions. In accordance with this suggestion, a reanalysis of Pollina et al's (1992) and Matthews et al's (1990) findings, suggest apparent agreement on only two factors; a dominant general factor with regards to cognitive failure and a more minor factor to do with an inability in processing people's names (Larson et al., 1997).

To test Matthews et al's (1990) speculation that the CFQ is only measuring two distinct dimensions, Larson et al (1997) conducted a factor analysis on CFQ data gathered from the largest and most diverse group of subjects ever tested on the CFQ: 2949 American Navy recruits. Their findings confirmed Matthews et al's (1990) hypothesis; the CFQ is comprised of two factors: 1. a general cognitive failure and 2. a name processing failure.

However, Larson et al (1997) also found that the CFQ's dominant general factor correlated highly (i.e. r's = 0 .87 - 0 .94) with overall CFQ score. Moreover, intercorrelations between all the 'first' factor composites identified by Pollina et al (1992) and Matthews et al (1990) were very high (r = 0.75 - 0.89). For example, even when two distinct factor composites sharing only *one* item in common were compared, a correlation of 0.75 was obtained (Larson et al., 1997). Thus, this suggests that all identified 'first' factor composites are interchangeable; with each other as well as with overall CFQ score.

These overall findings are consistent with Broadbent et al's (1982) original conclusions regarding the CFQ's dimensional structure. Namely, as Broadbent et al (1982:5) states: "Apart from the obvious general factor the results are highly variable from one group to another". Given that the general CFQ dimension correlates highly with overall CFQ score and there is weak evidence for replicable secondary dimensions (i.e. failure to process names is based primarily on only two CFQ items), several researchers (e.g. Broadbent et al., 1982; Larson et al., 1997) apply and thus recommend the use of only the total CFQ score as index of choice when analysing correlates of absent-mindedness.

2.3.6. *Absent-mindedness and Gender*

With regards to possible gender differences in absent-mindedness, research is scarce. However, results from two independent studies (Jones & Martin, 2003; Pollina et al., 1992) suggest that gender differences do exist. For example, in a study on computing failures among 58 undergraduate students, Jones and Martin (2003) found that females had significantly greater CFQ scores (M = 50.7, SD = 12.4) than males (42.5, SD = 13.7). Consistent with this finding, Pollina and colleagues (1992) found that in a relatively large sample (n=387) of college students, females reported significantly more cognitive failures overall than males ($p < .02$). An examination of the mean CFQ scores on each individual item indicated that females reported significantly more cognitive failures than males on 9 of the 25 items; whereas males reported significantly more cognitive failures than females on 3 of the 25 items (two of which were name processing errors). The effect sizes of these gender differences however, were rather small ($\eta^2 = .00 - .06$). Hence, more research that focuses on examining possible gender differences in absent-mindedness is necessary.

2.3.7. *Absent-mindedness and Age*

With regards to whether or not absent-mindedness and other related components of everyday memory are influenced by differences in age, research is lacking (Pollina et al., 1992). The main reason for this appears to be a tendency for research in this area to rely predominantly on study samples comprised of undergraduate students (e.g. Merckelbach, Muris, Nijman, & de Jong, 1996; Merckelbach et al., 1999, 2000b, Merckelbach, Horselenberg, & Schmidt, 2002; Pollina et al., 1992). Given the restricted age ranges of these study samples, any analyses carried out on the possible effects of age would not have yielded meaningful results.

However, based on his preliminary (1977, 1979) studies on absent-mindedness, Reason (1993) discussed the observation that rather than being linked to greater CFQ scores (as might be expected), increasing age appears to be associated with decreasing scores on the CFQ (cited by Jones & Martin, 2003). Reason (1993) suggests a number of possible explanations for this finding. In particular, making a mistake whilst engaged in a task of practical importance (i.e. driving through a red light in a car) may become less likely over

time given the potentially dangerous and/or costly consequences of having done so in the past (cited by Jones & Martin, 2003).

However, given that self-report questionnaires are often criticised for being subject to various biases and distortions of reality (i.e. demand characteristics, social desirability), it is also logically possible that the CFQ is prone to systematic deviations from the truth (Jones & Martin, 2003). For example, perhaps younger individuals as has also been suggested with the DES, (e.g. Elzinga, Bermond, & van Dyck, 2002) are more likely to report their experiences more truthfully (i.e. it might be more acceptable to make more errors while young). However, Merckelbach et al (2001) found no correlation between the CEQ and social desirability (e.g. $r = 0.03$) in a sample of 79 students, which suggests that the CFQ is *not* particularly vulnerable to self-reporting biases.

2.3.8. Cultural Differences

With regards to whether cultural differences exist in fantasy proneness and absent-mindedness, an exhaustive review of the literature by the author suggests that research in this area is yet to be conducted.

2.4. Dissociation and mental health

2.4.1. Introduction

There is an extensive body of literature (both historical and recent) that appears to provide substantial support for the traditional and widely held contention that dissociative experiences are directly linked to both past experiences of childhood trauma and subsequent mental illness. However, these studies have several limitations given a lack of direct empirical evidence (i.e. experimental and longitudinal studies). Moreover, many of the findings from these studies may be flawed given that there is an over reliance on subjective (i.e. self-report) as opposed to objective (i.e. actual life experiences) measures of past childhood trauma in the research literature.

Thus, the purpose of this section is to provide a brief review of the literature surrounding the aetiology of dissociation (i.e. the trauma-dissociation model). This will be followed by a discussion of the limitations of such research, which in turn, will pave the way for exploring alternative and more complex theories of the links between trauma, dissociation and subsequent mental illness in the sections that follow.

The major goal of this study is to explore the relationships between dissociative experiences and the closely associated personality characteristics of fantasy proneness and absent-mindedness, and how they relate to general aspects of mental health. Thus, the relationship between dissociative experiences and subsequent mental illness as opposed to the trauma-dissociation link per se is of primary importance in this current study. However, given that the findings of this study may have important implications for assessing the veracity of self-reports of childhood trauma, an understanding of the possible interactions between traumatic experiences, dissociative tendencies and subsequent psychopathology are also vital to the present study.

2.4.2. Aetiology of dissociation (i.e. Trauma-dissociation model)

Over the last 15-20 years, there have been numerous clinical and non-clinical studies demonstrating a close relationship between self-reports of traumatic childhood experiences (i.e. sexual, physical, and emotional abuse/neglect) and dissociative phenomena (e.g. Carlson & Rosser-Hogan, 1991; Chu & Dill, 1990; Engel, Walker, & Katon, 1996; Merckelbach et al.,2002; Mulder et al., 1998; Nijman et al., 1999; Putnam, 1985, 1989; Sandberg & Lynn, 1992; Sanders & Giolas, 1991; Saxe et al., 1993; Van den Hout, Merckelbach, & Pool, 1996; van der Kolk, 1987; van der Kolk & Fisler, 1995; Zlotnick et al., 1996).

The majority of these studies conclude that dissociative tendencies are the result of traumatic events experienced during childhood. In other words, it is assumed that prior traumatic experiences serve as the primary antecedents of subsequent dissociative phenomena (Gershuny & Thayer, 1999; Putnam et al., 1996). Although most studies demonstrating a link between trauma and dissociation have been carried out over the last

decade and are thus relatively recent, the notion that dissociation serves as the fundamental psychological process with which people cope with traumatic experiences is not a new one. This interpretation, along with the concept of psychological dissociation itself, dates back to work carried out by Pierre Janet during the early 20th century (see Gershuny & Thayer, 1999; Putnam, 1989; van der Kolk & van der Hart, 1989; van der Kolk, Brown, & van der Hart, 1989 for historical recounts).

In accordance with this trauma-dissociation model, dissociation is believed to be a long-term means of coping with emotionally overwhelming traumatic events experienced during childhood (e.g. Classen, Koopman, & Spiegel, 1993; Ross, 1997; cited by Merckelbach et al., 2002). In particular, dissociation appears to function as a means of escaping psychologically when physical escape is impossible (Herman, 1997; Ludwig, 1983; Kihlstrom, 1990; Spiegel, Hunt, & Dondershine, 1988; Steinberg, 1995; van der Kolk, 1987, 1996). This psychological escapism is thought to be achieved via the compartmentalisation (or separation) of painful emotions and memories associated with the childhood trauma from the stream of normal conscious awareness (i.e. dissociation). Herman (1997) states that this seems to be akin to the 'fight and flight' response (i.e. responding to a threat by either fighting or fleeing) typically experienced by individuals faced with threatening circumstances. However, instead of fleeing physically, an individual flees emotionally and cognitively via alterations in consciousness (i.e. detachment, psychological numbing) (Herman, 1997).

Additionally, it has been speculated that dissociation may prevent any immediate or subsequent attempts at introspectively accessing particular "mental contents" (Kihlstrom, 1990) This would serve to protect the individual from becoming consciously aware of the full extent of the trauma experienced - both during and after the event itself (van der Kolk, 1996). As a result, overwhelming memories and emotions related to the traumatic event are evaded (Litz, 1992) and thus become "disconnected from the social domains of language and memory" (Herman, 1997:239).

Whilst initially, dissociation appears to function as an adaptive means of coping with a traumatic event, (e.g. Putnam, 1989; Classen et al., 1993) experiencing high levels of dissociation over long periods of time are typically found to relate to high levels of psychological distress and maladjustment (e.g. Classen et al., 1993; Herman, 1997; Terr, 1995; van der Kolk & Fisler, 1995). According to Foa and colleagues (Foa & Kozak, 1986; Foa & Hearst-Ikeda, 1996) an individual's inability to access painful memories and emotions associated with the traumatic event (i.e. emotional/ informational processing is mired) along with other dissociative tendencies, prevent the activation of symptom structures which are necessary for emotional healing to take place. Thus, instead of alleviating symptoms, prolonged dissociative tendencies tend to maintain them. Moreover, individuals that dissociate as a means of coping with an adverse or traumatic experience are believed to be at risk for continuing to do in response to even the minor of stresses (see van der Kolk & Fisler, 1995). Hence, dissociation serves as both a defence as well as a symptom, such that disorders with a dissociative component (i.e. DID, other dissociative disorders, PTSD, BPD, bulimia) are not only caused by dissociation, but are subsequently perpetuated and exacerbated by any ongoing dissociation (van der Kolk, 1987, 1996). Also fundamental to the trauma-dissociation model is the contention that ongoing traumatisation may result in more or less severe dissociative symptoms that have trait-like qualities (Loewenstein, 1991).

A study by Waller and colleagues (1995) provides empirical evidence that information processing may indeed be hindered in dissociated individuals. These researchers discovered that whilst participating in a cognitive processing test, women with high levels of dissociation (especially absorption) were slower to react to information of a threatening nature than women with lower levels of dissociation. Thus, not only does ongoing dissociation tend to lead to further psychological distress, it appears to impede ongoing attempts at adaptive functioning and therefore, can be physically as well as psychologically harmful (Gershuny & Thayer, 1999).

It is important to note that dissociation is also related to traumatic events experienced in adulthood. However it is thought that dissociation in response to childhood trauma is more

severe and pervasive (e.g. van der Kolk & Fisler, 1994, 1995). Moreover, most of the research with regards to the relationship between traumatic experiences and dissociative phenomena has been in relation to childhood trauma and abuse (Gershuny & Thayer, 1999).

2.4.3. Evidence for link between trauma and dissociation

With regards to the evidence for a link between trauma and dissociation, there have been literally hundreds of articles published since 1980 (Merckelbach & Muris, 2001). Given the sheer volume of the research literature in this area, it is not possible to provide an exhaustive review of these findings. Thus, only a small number of individual studies considered to be of utmost importance to the nature of the current domain of research will be discussed here.

As mentioned previously, a substantial number of clinical and non-clinical studies (e.g. Chu & Dill, 1990; Engel et al., 1996; Merckelbach et al., 2002; Mulder et al., 1998; Sandberg & Lynn, 1992; Sanders & Giolas, 1991; Zlotnick et al, 1996) have found significant correlations between self-reports of childhood traumatic events and dissociative experiences. For example, Zlotnick et al (1996) obtained a correlation of 0.40 between self-reports of childhood sexual abuse and DES scores in a sample of 148 female psychiatric inpatients. Similar correlations between dissociation and self-reports of childhood trauma have been reported for various other clinical groups (e.g. Engel et al., 1996; Chu, Frey, Ganzel, & Matthews, 1999). However, several authors (e.g. Pope & Hudson, 1995; Mulder et al., 1998) have recommended that caution be applied when interpreting clinical findings such as these. For instance, an alternative explanation might very well be that individuals with both a history of childhood abuse and dissociative symptoms are more likely to have received psychological treatment than individuals with dissociative symptoms, but no history of childhood abuse (Merckelbach & Muris, 2001).

Despite the relatively robust correlation obtained by Zlotnick et al (1996), correlations of this magnitude have not been consistently obtained. For example, in a large sample of undergraduate students (N=312), DiTomasso and Routh (1993) obtained a correlation of

0.21 between self-reports of sexual abuse and dissociative tendencies (as indexed by the DES) and an even weaker correlation of 0.18 between physical abuse and dissociative tendencies (cited by Merckelbach & Muris, 2001). In a sample of 109 undergraduates, Merckelbach et al (2002) obtained a slightly more moderate correlation of 0.34 between self-reports of overall childhood trauma as indexed by the short form of the Childhood Trauma Questionnarie (CTQ; Bernstein & Fink, 1998) and dissociation, as measured by the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986).

A meta-analysis carried out by Rind, Tromovitch, and Bauserman (1998) indicates that moderate correlations between self-reported abuse and dissociative symptoms are indeed typical in university samples. However, low correlations have also been reported for clinical groups expected to have greater levels of psychological disturbance and/or dysfunction. For example, in a study that investigated dissociative symptoms among Holocaust survivors, (Yehunda et al., 1996) a low and non-significant relationship was in fact found between dissociation and exposure to trauma. This finding led the researchers' to conclude that "in contrast to current dogma, dissociation in Holocaust survivors is not simply a consequence of having experienced severe trauma" (Yehunda et al., 1996:938).

Although Nash, Hulsey, Sexton, Harralson, & Lambert (1993) found that women with a history of sexual abuse had significantly greater levels of dissociation than women with no such history, this relationship disappeared when family pathology was included as a covariate in the analysis. Similarly, although Sanders and Giolas (1991) obtained a relatively moderate correlation of 0.26 between a self-reported history of childhood sexual abuse and scores on the DES in a sample of adolescent inpatients, a more robust correlation of 0.50 was obtained between self-reports of negative family environment and DES scores. Moreover, simply answering 'yes' to the question "was your childhood stressful?" yielded a moderate correlation of 0.31 with DES scores in Sanders and Giolas (1991) study. This suggests that it is an individual's perception of their family environment and aversive or traumatic events that leads to dissociative psychopathology, rather than the nature of the trauma per se.

Along with family pathology having, at least, a partial mediating effect on the relationship between childhood trauma and dissociation, (Nash et al., 1993) several studies (e.g. Cima, Merckelbach, Klein, Shellbach-Matties, & Kremer, 2001; Mulder et al., 1998) have found the link between trauma and dissociation to be dependent on an individual's current psychiatric complaints. For example, using logistic regression modelling on a large randomly selected community sample (N=1,028), Mulder et al (1998) found that childhood sexual abuse was not directly linked to scores on dissociation. Rather, the dissociative effects of sexual abuse were contingent on the relationship between childhood sexual abuse and current psychiatric diagnosis and/or the relationship between childhood sexual abuse and childhood physical abuse. In other words, childhood sexual abuse does not lead to dissociative symptoms unless either childhood physical abuse or current mental illness has also been reported.

2.4.4. Limitations of link

Findings from studies such as those mentioned above, indicate that the evidence for a direct simplistic link between trauma and dissociation is not as compelling as was previously thought (Lilienfield et al., 1999; Merckelbach & Muris, 2001). As Frankel (1996) states, the commonly held belief that there is a strong direct link between trauma and dissociation has been largely unchallenged in past clinical literature because of the degree of comfort such a simplistic explanation provides.

Not only is the evidence for a robust and direct link between trauma and dissociation less than compelling, most of the research in this area has been cross-sectional and over reliant on retrospective self-reports of childhood trauma (Merckelbach et al., 2001; Merckelbach & Jelicic, 2004). Retrospective reports of psychosocial variables (especially those concerned with autobiographical memory of events) have been criticised for being highly fallible, subject to distortion, and susceptible to methodological bias (e.g. Henry, Moffitt, Caspi, Langley, & Silva, 1994; Schwarz, 1999). For example, in a longitudinal study conducted by Henry and colleagues (1994), a host of objective information (e.g. parental attachment, family conflict, injuries) was gathered from a large sample of children on a number of separate occasions during their childhood. These objective records were then

later compared to retrospective self-reports obtained from the youths at age 18. The results showed that the level of consolidation between these two reporting methods was relatively weak. This led Henry et al (1994:92) to conclude that "reliance on retrospective reports about psychosocial variables should be approached with caution".

Empirical studies however, are also not without their methodological limitations. Moreover, there are obvious ethical reasons why, in most instances, it would be totally inappropriate to deliberately expose people to traumatic events, or to systematically follow the development of symptoms after traumatic events in order to directly measure the immediate and short-term effects of trauma (Spiegel & Cardena, 1991). Hence, it is totally understandable why most researchers have relied on retrospective self-report measures in this area. Additionally, although these studies do not enable direct causal statements to be made regarding the relationship between childhood trauma and dissociative pathology, there is substantial support in the literature; as well as overwhelming agreement among researchers that trauma and/or abuse are reliably and robustly related to dissociative pathology (Spiegel & Cardena, 1991).

In any case, in order to ultimately demonstrate that a history of childhood trauma is the primary cause of dissociative symptomatology and subsequent disorder, direct empirical evidence (i.e. objective "verified" records of childhood trauma) is necessary (Merckelbach & Muris, 2001; Merckelbach, Muris, & Horselenberg, 2000a). Bar a couple of exceptions in the literature (e.g. Cardena & Spiegel, 1993) that demonstrate a link between recently experienced traumatic events and peritraumatic dissociation, (i.e. dissociation at the time of the traumatic event) this research is lacking.

2.4.4. Correlates of dissociative experiences

Further evidence that the link between trauma and dissociative experiences is *not* as direct or simplistic as was previously thought, comes from a current line of research concerned with exploring the individual difference correlates of dissociation. In particular, robust correlations have consistently been found between the DES and measures of fantasy proneness (e.g. Merckelbach et al., 1999, 2000c, 2002; Rauschenberger & Lynn, 1995;

Pekala et al, 1999/2000; Silva & Kirsch, 1992) and between the DES and absent-mindedness (Merckelbach et al., 1999, 2002), as indexed by the Cognitive Failures Questionnaire (CFQ; Broadbent et al., 1982).

There are two major reasons why these overlaps deserve serious consideration; Firstly, it is important to note that fantasy proneness and absent-mindedness are both, in essence, regarded to be benign personality characteristics that are not intrinsically linked to psychopathology (e.g. Broadbent et al., 1982; Lynn & Rhue, 1988). An acceptance of this finding suggests that the DES may not be an appropriate tool for screening for dissociative psychopathology (Merckelbach et al., 2000a). Consistent with this viewpoint, Sandberg and Lynn (1992:722) found that 8 individuals that scored in the upper 2% of the population on the DES did not meet the DSM-III criteria for a dissociative disorder. This finding suggests that, when used with non-clinical populations, the DES has a tendency to produce a large amount of false positives for dissociative disorder (Sandberg & Lynn, 1992).

However, there are a number of reasons why it may not necessarily follow that the DES is therefore an inappropriate screening tool for dissociative symptoms and disorders in non-clinical populations. First and foremost, (as mentioned previously) the DES is *only* a screening tool for identifying dissociative pathology. Thus, it should never be used to make a definitive diagnosis without the use of a diagnostic instrument (Broadbent et al., 1982). Secondly, the presence of dissociative symptoms does not necessarily restrict clinicians and researchers to assigning diagnoses that are primarily dissociative in nature. For instance, the dissociative symptom of depersonalisation has been reported to be the third most common pathological symptom, surpassed only by depression and anxiety (Cattell & Cattell, 1974; Steinberg, 1995). Moreover, the dissociative symptoms of depersonalisation and derealisation have been found to figure prominently in many other psychiatric disorders, regardless of diagnosis (Brauer, Harrow, & Tucker, 1970; Fliess, Gurland, & Goldberg, 1975; Saxe et al., 1993; Tucker, Harrow, & Zuinlan, 1973).

Thirdly, perhaps the personality correlates of fantasy proneness and absent-mindedness are not as benign as was previously (Broadbent et al., 1982; Lynn & Rhue, 1988; Reason,

1993) and is currently (Merckelbach et al., 2000a, 2001) maintained. For example, several studies conducted by Merckelbach et al (1999) have consistently found that the fantasy proneness and absent-mindedness tap into components of dissociation assumed to be pathological (i.e. dissociative states, depersonalisation). While this might indicate that there are serious methodological issues with the DES and possible conceptual issues with the current definition of dissociation itself, an alternative explanation might be that these correlates are less benign than is currently argued. For instance, there is an extensive amount of research that demonstrates that high levels of both fantasy proneness (e.g. Rauschenberger & Lynn, 1995; Rhue & Lynn, 1987a; Waldo & Merritt, 2000) and absent-mindedness (e.g. Broadbent et al, 1982; Matthews & Wells, 1988) are related to various psychiatric illnesses (e.g. depression, anxiety and personality disorders) in non-clinical populations. Thus, at the very least, these studies suggest that these personality characteristics are predictive of an increased vulnerability to psychopathology in general.

A second major implication of these overlaps arises from evidence in the research literature (e.g. Hyman & Billings, 1998; Johnson, Edman, & Danko, 1995; Merckelbach et al., 2000a, 2000b) indicating that fantasy proneness and absent-mindedness may compromise the accuracy and thus reliability of autobiographical self-reports of past trauma.

In relation to fantasy proneness for example, Hyman and Billings (1998) found that high dissociators and 'fantasisers' are more likely to develop pseudomemories than those with lower levels of these two phenomena. Moreover, Merckelbach and colleagues (2000a) found that individuals that score high on both dissociative tendencies and fantasy proneness tend to over-endorse items (both negative and neutral in content) used to sample autobiographical events. Consistent with this finding, Johnson and colleagues (1995) found that high DES scores were related to a tendency to report negative life events. However, when the effects of fantasy proneness were controlled for in Merckelbach et al's (2000a) study, the correlation between DES scores and having a positive response tendency was greatly reduced. In other words, people with heightened dissociative tendencies tend to employ liberal criteria (i.e. exhibit a positive response bias) when deciding whether a

particular item relates to an autobiographical event. Moreover, this relationship is greatly influenced by an individual's degree of fantasy proneness (Merckelbach & Muris, 2001).

With regards to absent-mindedness, Merckelbach et al (2000b) found that high levels tend to be linked to an increased susceptibility to suggestive post-hoc information. Moreover, when the influence of absent-minded errors were controlled for in Merckelbach et al's (2000b) study, the correlation between dissociation and suggestibility was reduced to non-significant levels. Thus, this suggests that, at the very least, absent-mindedness is a *partial* mediator of the relationship between dissociation and susceptibility to suggestive misleading post-hoc information. According to Gudjonsson (1997) and Merckelbach et al (2000b), these findings suggest that individuals with heightened levels of dissociation and absent-mindedness may have reduced competence and/or confidence when it comes to their own memory capabilities. Thus, when it comes to providing autobiographical accounts, these individuals tend to be more vulnerable to misleading information presented by others.

Although these findings do not rule out the possibility that a history of traumatic and/or aversive childhood events is the leading developmental cause of dissociative tendencies, fantasy proneness, absent-mindedness, positive response bias, and suggestibility, dissociation's close association with the above features indicates that the authenticity of self-reports of childhood trauma are extremely questionable (Merckelbach et al., 2001, 2002). Thus, in order to successfully show that a traumatic background is responsible for an array of features that includes fantasy proneness and absent-mindedness, studies that provide independent corroboration of childhood trauma (i.e. verified hospital records) are necessary (Merckelbach & Muris, 2001).

2.5. Dissociation and Personality

The aim of this section is to provide an overview of the current research literature demonstrating strong links between dissociation and the personality characteristics of fantasy proneness and absent-mindedness.

2.5.1. Dissociation and fantasy proneness

Given Wilson and Barber's (1981/1983) finding that individuals with highly hypnotic abilities also reported high levels of fantasy proneness, it was speculated (e.g. Waldo & Merritt, 2000) that fantasy proneness may also be related to dissociative experiences, as high levels of dissociation have also been found in highly hypnotic individuals (e.g. Bliss, 1983; Frischholz, Lipman, Braun, & Sachs, 1992; Putnam, Helmes, Horowitz, & Trickett, 1995). Subsequent studies have indeed provided support for this hypothesis in that, there is a considerable amount of research evidence (e.g. Merckelbach et al., 1999, 2000c; Pekala et al., 1999/2000; Rauschenberger & Lynn, 1995; Silva & Kirsch, 1992; Waldo & Merrit, 2000) demonstrating that there is at least, a moderately strong link between dissociative experiences and fantasy proneness.

For example, Pearson product-moment correlations ranging from between 0.42 (Silva & Kirsch, 1992) and 0.63 (Merckelbach et al., 1999) have been reported for university student samples. Likewise, moderate to high correlations (i.e. 0.40 - 0.63) between measures of dissociation and fantasy proneness/imaginative involvement have been obtained for children and other adult populations (Green, Kvaal, Lynn, Mare, & Sandberg, 1991; Segal & Lynn, 1992-1993). Moreover, Waldo and Merritt (2000) found that high fantasisers had significantly higher DES and DES-T (the pathological version of the DES; Waller, Putnam, & Carlson, 1996) scores compared to low fantasy prone controls.

Several authors (e.g. Bowers, 1991; Carlson & Putnam, 1989; Putnam, 1989; Young, 1988) have argued that the link between dissociation and fantasy proneness can be explained in that imaginative involvement and fantasy are "potentially important developmental substrates of dissociation". Moreover, Lynn, Rhue, & Green (1988) have further speculated that high levels of fantasy proneness may lead to an increased risk of receiving a diagnosis for a dissociative disorder. These authors suggest that fantasisers may be especially at risk for discontinuities in experience akin to what is regarded as "dissociation", given that they: (a) may have difficulty differentiating the boundaries between reality and fantasy; (b) have a tendency to be preoccupied with internal experiences; and (c) have the ability to create alternative, yet similar and believable selves.

Likewise, according to Cardena (1992) fluid boundaries, both between one's internal and external experiences, and perceptions of self versus non-self are related to dissociative possession states. For example, the lapses in attention and concentration that occur when absorbed in daydreaming and fantasy, may be similar to, at least in part, the dissociative phenomena of "missing time". Moreover, fantasisers that have difficulty distinguishing between reality and fantasy may be particularly susceptible to derealisation experiences common in dissociative individuals (Rauschenberger & Lynn, 1995).

Critics of the DES however, (e.g. Kihlstrom et al., 1994; Spanos, 1996) have argued that although this robust association between dissociation and fantasy proneness indicates that there is considerable continuity between normal personality and psychopathology, it is important to note that one of the major factors of the DES taps into the relatively normal experiences of absorption and imaginative involvement (e.g. missing aspects of a conversation). In other words, it is possible that the observed relationship between dissociation and fantasy proneness is more an artefact of overlapping in item content.

If this is the case, it raises important theoretical and/or conceptual uncertainties regarding the significance of the correlation between absorption and dissociation (Merckelbach et al., 1999). Moreover, it questions the utility of the DES as a screening tool of dissociative disorders and psychopathology – given that absorption and/or fantasy proneness are not necessarily linked to high levels of psychopathology (Lynn & Rhue, 1988). However, in a study exploring the relationship between fantasy proneness and the three separate factors of the DES, Merckelbach et al (1999) found that fantasy proneness (i.e. the CEQ) not only correlated significantly with the normal DES component of absorption and imaginative involvement, but was also positively related to the DES factors considered to be predictors of severe psychopathology (i.e. dissociated states and depersonalization-derealization).

2.5.2. Dissociation and Absent-mindedness

It has been postulated (Frankel, 1990; Hacking, 1995) that DES scores are closely linked to a lack of cognitive efficiency or cognitive control (i.e. absent-mindedness). Frankel (1990) reached this conclusion after close examination of the DES items revealed that more than

75% of them could be explained by the way in which subjects apply or redistribute attention, recall memories, direct or monitor control, or use their imagination.

In line with this contention, several studies (e.g. Merckelbach et al., 1999, 2000b, 2002) have indeed found a moderate to strong association between dissociative experiences and absent-mindedness; with correlations ranging between 0.42 and 0.53. Moreover, in two consecutive studies conducted by Merckelbach et al (1999) cognitive failures were found to correlate significantly with all three DES factors (i.e. absorption-imaginative involvement, depersonalisation-derealisation, and dissociated states). Thus, although in principle, like fantasy proneness, absent-mindedness is typically regarded to be a benign trait not inherently linked to severe psychopathology (e.g. Broadbent et al., 1982) it was in fact associated with the two DES components regarded to be indicative of severe psychopathology (Merckelbach et al., 1999).

2.5.3. Dissociation, fantasy proneness, and absent-mindedness

Although several authors have consistently found a strong relationship between dissociation and fantasy proneness on the one hand (e.g. Mercelbach et al., 1999; 2000b, 2000c, 2002; Rauschenberger & Lynn, 1995; Silva & Kirsch, 1992) and dissociation and absent-mindedness on the other hand (e.g. Merckelbach et al., 1999; 2000b; 2002), whether there is a direct relationship between fantasy proneness and absent-mindedness is less clear. For example, in two consecutive studies examining the relationship between the three variables, Merckelbach and colleagues (1999) found that the correlations obtained between the measures of fantasy proneness and absent-mindedness (0.15 and 0.16 respectively) did not reach statistical significance. The finding that fantasy proneness and absent-mindedness are unrelated suggests that both variables make unique contributions to DES and are therefore, independent predictors of dissociation.

To further explore this possibility, Merckelbach et al (1999) conducted partial correlations on each of the variables. When either the CFQ or the CEQ was held constant, the DES continued to correlate just as strongly with each of the measures. Thus, both the CFQ and the CEQ scores made unique contributions to the variance in DES scores. Overall, the

combined measures of absent-mindedness and fantasy proneness accounted for 45.8% of the variance in dissociation scores (Merckelbach et al., 1999). In study two, an alternative measure of absent-mindedness (the SIML) was applied. Again, partial correlations revealed that both variables play an independent and significant role in predicting dissociation.

In keeping with these findings, Merckelbach et al (2000b) also found a non-significant relationship between absent-mindedness and fantasy proneness ($r = 0.18$). In contrast however, in a later study, Merckelbach et al (2002b) found a relatively weak but significant correlation ($r = 0.25$) between the CFQ and the CEQ. This finding suggests that rather then being independently related to dissociative experiences, the inter-relationships between these three variables are far more complex.

2.6. Alternative theories of Trauma-Dissociation link

2.6.1. Introduction

At present, there are considerable gaps in the research literature with regards to the relationship between childhood trauma and dissociation. In particular, research is lacking with regards to:

1. the relationship between dissociation and the "so-called" benign personality characteristics of fantasy proneness and absent-mindedness
2. the accuracy of autobiographical self-reports of childhood trauma
3. empirical research that clearly demonstrates that childhood trauma precedes dissociative tendencies

Given that these gaps exist, the relationship between trauma and dissociation is open to multiple interpretations (Merckelbach & Muris, 2001). Thus, the purpose of this section is to explore some of the more common explanations presented in the current literature.

2.6.2. Trauma-Dissociation vs Dissociation-Trauma Model

In particular, Merckelbach et al (2000a, 2001, 2002) have proposed two opposing causal models (figure 1) that could account for the relationship between trauma and dissociation.

The first model is the traditionally held trauma-dissociation model. This model assumes that self-reports of childhood trauma serve as antecedents of dissociation and its correlates, fantasy proneness and absent-mindedness. The second, and perhaps less obvious model, (i.e. the dissociation-trauma model) argues that dissociation and its correlates lead to a positive endorsement of negative items on self-report indexes of childhood trauma (Merckelbach et al, 2002).

It is important to note that the dissociation-trauma model does not intend to imply that people high on dissociation and its correlates tend to report "widely inaccurate responses on self-report measures of trauma". Rather, it is argued that the severity of negative childhood events may be exaggerated by these individuals (Merckelbach et al., 2002:703). Germane to this contention, is the finding of Johnson et al (1995) that, high dissociators tend to report experiencing many negative life events. Moreover, although the reporting of many aversive childhood experiences may relate to heightened dissociation, these negative events are not necessarily what the majority of us would view as traumatic. Also consistent with the proposed dissociation-trauma model, Merckelbach and Jelicic (2004) found that, at least in non-clinical samples, heightened dissociation and fantasy proneness both contribute to disambiguaty and the over-endorsement of vague (i.e. broadly formulated) trauma items (e.g. "When I was growing up, someone molested me") on self-report measures of childhood trauma.

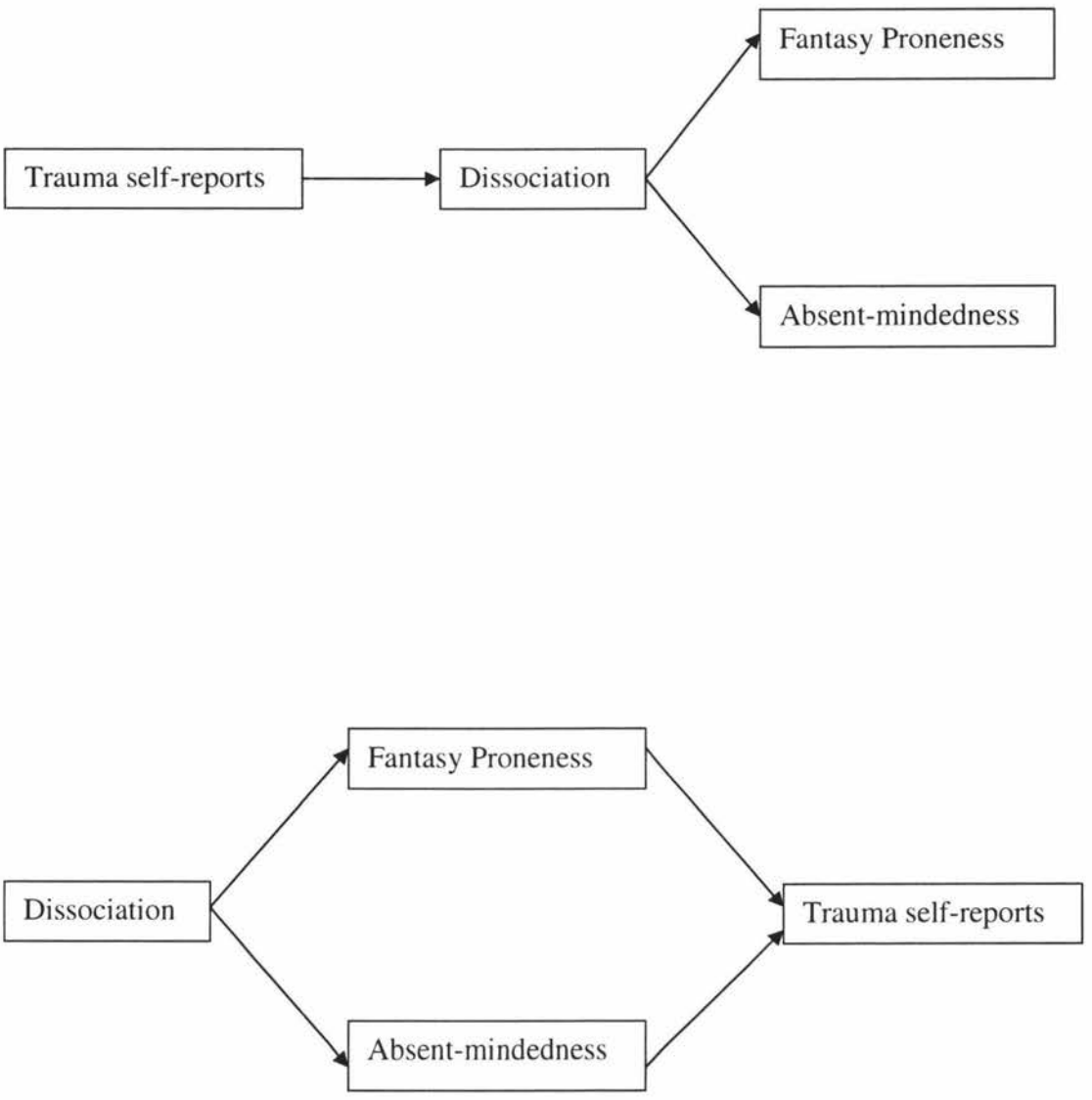

Figure 1: Above: the Trauma-Dissociation Model. Below: the Dissociation-Trauma Model.

In order to test these two causal models, Merckelbach et al (2002) conducted structural equation modelling. The results of their study were inconclusive as support was obtained for both causal models. However, Merckelbach et al (2002) argued that, in some respects, the less conventional dissociation-trauma model was more in line with the observed data. Clearly, further research investigating the possible causal networks of dissociation is necessary. For instance, it may well be the case that these two models are too simplistic, and that the interactions among self-reports of trauma, dissociation, fantasy proneness, and absent-mindedness are indeed more complex (Merckelbach et al., 2000b). For example, other factors commonly found to correlate with these variables (i.e. family pathology, attachment, emotionality, coping styles, cognitive control) may also operate within this nomological network (Merckelbach & Muris, 2001; Rauschenberger & Lynn, 1995; Rhue & Lynn, 1987a).

2.6.3. Benign personality versus traumatogenic pathway

Following on from Merckelbach et al's (2000b) findings that the correlates of dissociative experiences tend to contribute to the confabulation of traumatic memories, Candel, Merckelbach, and Kuijpers (2003) proposed that there may in fact be two separate pathways to dissociation:

1. A benign pathway which claims that given links between dissociation and relatively benign characteristics (namely fantasy proneness), dissociation is associated with memory commissions.
2. A traumatogenic pathway that argues that dissociation is related to defensive coping which entails the fragmentation of emotional memory and thus, leads to memory omissions.

When Candel et al (2003) tested these two rival hypotheses regarding the relationship between dissociation and emotional memory, they found no relationship between dissociation and memory omissions to provide evidence for the defensive coping function of dissociation commonly held by the trauma-dissociation model. However, given that the participants were exposed to a "mock" emotional event, it could be argued that it might not of been powerful or personal enough to evoke strong emotional responses (Candel et al.,

2003). Moreover, the amnesic power of dissociation is itself another highly contentious area. For example, while some researchers argue that dissociation prevents the recall of highly emotional memories regarding the traumatic event (e.g.Gudjonsson, 1997; Merckelbach et al., 2000a, 2000b), others argue that the more personally relevant (i.e. emotionally arousing) the traumatic event, the more accurate an individual's subjective reports are of these experiences (e.g. Bohannon, 1990; Christianson, 1992; Pillemer, 1984; Yuille & Cutshall, 1986). Moreover, several researchers (e.g. Briere & Conte, 1993; Herman & Shatzow, 1987) have found evidence to suggest that amnesia for traumatic memories is more common when the traumatic event occurred during childhood and in response to more prolonged traumatic experiences (i.e. sexual and physical abuse).

With regards to the proposed benign dissociation pathway, Candel et al (2003) did find a significant relationship between high DES scores and memory commissions. However, fantasy proneness was not found to be responsible for this relationship as partialling out the effects of fantasy proneness did not reduce the relationship between dissociation and memory commissions. This led Candel et al (2003) to conclude that perhaps the relationship between dissociative experiences and memory commissions was dependent on absent-mindedness or some other related phenomena. To date, it appears that further testing of Candel et al's (2003) hypotheses is yet to be conducted.

2.6.4 Diathesis-Stress Model

Yet another possible interpretation of the relationship between dissociation and its correlates has been proposed by Kihlstrom et al (1994). They proposed that the Diathesis-Stress model might account for the relationship among dissociation, fantasy proneness, absent-mindedness and psychopathology. According to this model, facets of normal personality (i.e. fantasy proneness and absent-mindedness) can be conceptualised as diatheses, or risk factors for pathological dissociation (for a more in-depth review of diathesis-stress theories, see Monroe & Simons, 1991).

The general formulation of the diathesis-stress model (figure 2) assumes that certain individuals are more vulnerable or predisposed to psychopathology, and when these

predilections are triggered by a stressor (i.e. a traumatic event), an episode of mental illness results. Diatheses and stressors complement each other, such that an extreme diathesis requires minimal stress, or even none at all for activation to occur. On the other hand, low levels of diathesis require more substantial levels of stress to trigger a psychopathic episode. Whilst diatheses are often biological in nature, they also tend to include social and cognitive factors. Likewise, although stressors tend to be environmental, they may also be biological (i.e. diseases or physical complaints) (Kihlstrom et al., 1994).

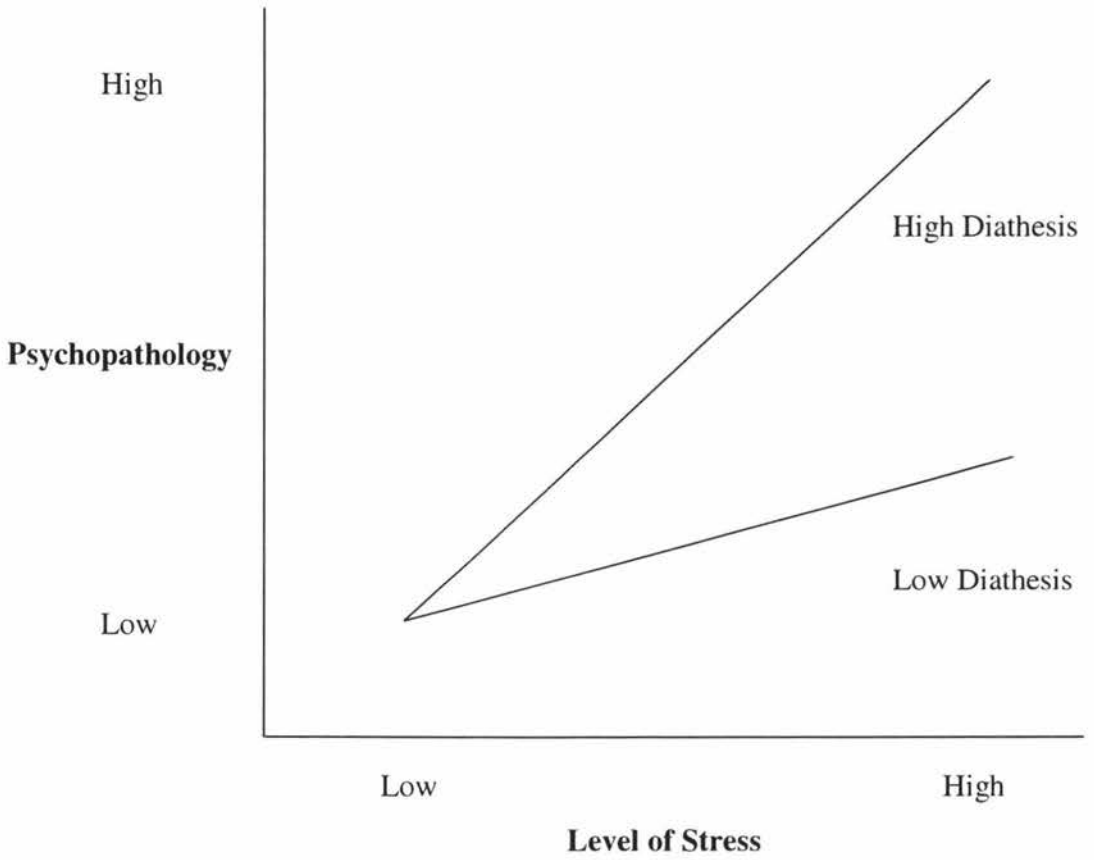

Figure 2: General Diathesis-Stress Model

Although an attractive and promising theory, diathesis-stress models are not without their flaws and limitations. As Monroe and Simons (1991) state, while most researchers have placed a lot of emphasis on how particular stressors activate diatheses, the possible ways in which diatheses themselves influence stress have been largely ignored. There are in fact compelling reasons for suspecting that the generation and reporting of life stresses are directly influenced by the diathesis itself. For example, the diathesis may effect an individual's perception of the world, which in turn, influences his or her reporting of stressful events. This speculation is consistent with findings from the current research area; in particular, that people with high levels of dissociation tend to report experiencing more aversive life events (Johnson et al., 1995).

These limitations do not however, indicate that diathesis-stress theories are therefore inappropriate for understanding the antecedents of psychopathology. Rather, as Monroe and Simons (1991) state, broader and more multidimensional interpretations of the diathesis-stress interactions are necessary. Furthermore, there is a need for more research that examines the possible "pathways by which diatheses may influence life stress" (Monroe & Simons, 1991:412).

In any case, the hypothesis that certain personality characteristics such as fantasy proneness and absent-mindedness constitute a dissociative diathesis is far from proven. Firstly, there is nothing intrinsically pathological about these traits, even when manifested at extremely high levels. Moreover, at present, there is a lack of evidence to suggest that people who display high levels of these characteristics have an increased vulnerability to dissociative disorders or any other type of psychopathology for that matter (Kihlstrom et al., 1994).

On the other hand, as Kihlstrom et al (1994) suggest, an alternative explanation for the relationship among dissociation, fantasy proneness, absent-mindedness, and psychopathology might be, *not* that people high on these characteristics are more vulnerable to psychopathology, but rather that these personality characteristics "shape the form of psychopathology" should an episode of mental illness occur (p.122). In other words, people high in fantasy proneness may be at no more of a risk of developing a

psychopathology than non-fantasisers. Rather, given the right circumstances for a pathological diathesis-stress interaction, people with heightened levels of these characteristics may be more likely to exhibit dissociative symptomatology as opposed to schizophrenia or depression.

2.7. Dissociation, Personality, and Mental Health

The purpose of this section is to provide a review of the research literature with regards to the relationship between fantasy proneness and mental health on the one hand, and absent-mindedness and mental health on the other hand. The main aim here is to determine whether these correlates of dissociative experiences are; mostly benign personality characteristics, or conversely (in line with a diathesis-stress model) indicative of an increased vulnerability (or predilection) to psychopathology.

2.7.1. Fantasy proneness and mental health

Although fantasy proneness is typically regarded to be a relatively benign personality characteristic, (e.g. Wilson & Barber, 1981, 1983) historically, fantasy proneness has also been linked to psychological maladjustment and dysfunction. For instance, Sigmund Freud (1908) argued that fantasy proneness featured significantly in the development of psychoses, hysteria, neurosis, and organic illness (cf. Raushenberger & Lynn, 1995). Moreover, in characterising the primary symptoms of 'pseudoneurotic schizophrenia', Hoch and Cattell (1959) used the concept *derestic thinking* to describe the role of intense fantasy involvement in this disorder. This concept illustrates a mode of thought common in individuals whose fantasy lives increasingly become so predominant in their thinking that problems in everyday living result, given their inability to ultimately distinguish fact from fantasy (cf. Raushenberger & Lynn, 1995).

More current research (e.g. Irwin, 1991; Lynn & Rhue, 1988; Raushenberger & Lynn, 1995; Rhue & Lynn, 1987a, 1987b, 1989; Sandberg & Lynn, 1992; Waldo & Merritt, 2000) also suggests that there is at least a modest direct association between fantasy proneness and various forms of psychopathology; such as schizophrenia, (Rhue & Lynn, 1987a,

1987b) depression, (Raushenberger & Lynn, 1995) schizotypy, (Lynn & Rhue, 1988; Merckelbach, Rassin, & Muris, 2000a; Merckelbach et al., 2001b) and borderline personality disorder (Huff & Council, 1987; Waldo & Merritt, 2000).

The inability of some fantasisers to discriminate fantasy from reality, a tendency for having vivid and unusual hallucinatory experiences (e.g. out-of-body and paranormal experiences), and a preference for spending over half their spare time engaged in fantasising (as opposed to involving themselves in current real world situations and activities) all suggest, that in some instances, fantasy appears to serve as a means of escaping or avoiding real experiences or situations that tend to evoke anxiety (Lynn & Rhue, 1988; Raushenberger & Lynn, 1995).

Although there is evidence in the literature of an apparent association between fantasy proneness and psychological maladjustment and/or pathology, Wilson and Barber (1983; cf. Rauschenberger & Lynn, 1995) argue that this is only true for a small minority of fantasisers. That for the most part, high levels of fantasy proneness are indicative of a benign personality trait that can be found in normal well-adjusted individuals for whom fantasising is an adaptive means of coping. However, Wilson and Barber's (1981, 1983) initial findings on the 'fantasy prone personality' are flawed and probably not very representative of fantasy prone persons in the general population given that their study sample consisted of high functioning professionals with postgraduate degrees (Rauschenberger & Lynn, 1995).

Various subsequent studies however, (Lynn & Rhue, 1986, 1988; Lynn, Rhue, & Green, 1988; Rhue & Lynn, 1987a, 1987b, 1989) have also provided evidence that psychological maladjustment and dysfunction is only found in a small minority of fantasisers. Based on previous study findings, Lynn and Rhue (1988) estimated that significant levels of psychopathology, maladjustment, or deviant ideation would apply only to between 20-35% (roughly ¼) of all fantasisers. Moreover, of the 21 fantasisers in Rhue and Lynn's (1987a) study, 6 (29%) reported that they had been severely physically abused (e.g. bruises, bleeding, broken bones) as children. This is consistent with Lynn and Rhue's (1988)

estimate that between 20-35% of fantasisers tend to exhibit significant levels of maladjustment, psychopathology, or deviate ideation. It is also consistent with Wilson and Barber's (1983) initial conception of fantasy proneness; that the majority of fantasisers are well-adjusted individuals for whom imaginative involvement is an adaptive means of everyday coping (cf. Rauschenberger & Lynn, 1995).

Also consistent with Lynn and Rhue's (1988) estimate, in a study that compared medium-level fantasisers with high fantasisers, Rauschenberger and Lynn (1995) found that 29% of fantasisers meet the criteria for a current DSM-III-R diagnosis. Interestingly however, this study also revealed that over 67% of fantasisers (compared to 31% of the medium fantasy prone students) meet the DSM-III-R criteria for either a past or present Axis-I disorder. Perhaps most striking, was the finding that 50% of the fantasisers indicated that they had experienced a past episode of major depression, compared to only 12% (a rate more comparable to lifetime prevalence rates of major depression) of the students with medium levels of fantasy proneness (Rauschenberger & Lynn, 1995).

As Rauschenberger and Lynn (1995) state however, it is entirely possible that this high rate of reported depression in fantasisers may be the result of a tendency to exaggerate and/or confabulate negative life events (i.e. positive response bias). However, Waldo and Merritt (2000) found that 55% of the fantasisers in their study meet the DSM-IV criteria for either, a cluster A (paranoid, schizoid, shizotypal) or cluster B (antisocial, borderline, histrionic, narcissitic) personality disorder. This finding lends support to the veracity of Rauschenberger and Lynn's (1995) finding that 50% of fantasisers may have indeed experienced a past episode of major depression. Thus, another possible explanation for these findings is that high levels of fantasy proneness may be indicative of an increased vulnerability to psychopathology (Rauschenberger & Lynn, 1995; Kihlstrom et al, 1994). This possibility is consistent with the Diathesis-Stress model discussed in the previous section.

2.7.2. *Absent-mindedness and mental health*

Although typically regarded to be a relatively benign characteristic, absent-mindedness (as measured by the CFQ) has also been found to be related to minor psychiatric complaints (e.g. Broadbent et al., 1982; Matthews & Wells, 1988; Merckelbach et al., 1996; Power, 1988). For example, Broadbent and colleagues (1982) found a modest relationship between absent-mindedness and trait anxiety (r=0.31) in a sample of nurses, and correlations ranging between 0.22 and 0.54 were obtained between absent-mindedness and poor mental health (as indexed by the MHQ) from six various occupational groups.

Further research by Broadbent et al (1982) however, revealed that although absent-mindedness scores were correlated with measures of trait anxiety and poor mental health, this relationship was only significant for the nurses working in high stress wards. Moreover, scores on absent-mindedness were not dependent on the degree of ward stressfulness. In other words, as Merckelbach et al (1996) suggest, minor psychological disturbances (i.e. neurosis, depression, anxiety) only occur in highly absent-minded individuals in response to *actual* life stress. Moreover, Broadbent et al (1982) argue that given that the level of stress did not influence the absent-mindedness score of the nurses, it is doubtful that high levels of absent-mindedness are the result of a current psychiatric complaint such as anxiety. In other words, absent-mindedness does not occur in response to stress. These results have thus lead researchers to conclude, that highly absent-minded individuals have an increased vulnerability, or predilection when it comes to developing stress (e.g. Broadbent et al., 1982; Matthews & Wells, 1988).

In exploring the role that absent-mindedness might play in vulnerability to specific psychiatric complaints, Power (1988) found that absent-mindedness scores were significantly related to dysfunctional attitudes and depressive and anxiety symptomatology, both initially and at a four month follow-up period. However, only the association between absent-mindedness and anxiety remained significant when the effects of the initial symptom levels were controlled for. Similar results were obtained in a non-clinical study (study 1) by Merckelbach et al (1996). These researchers found that the relationship between absent-mindedness and anxiety symptoms remained significant even when the

effects of trait variables (i.e. trait anxiety, neuroticism) were removed. This finding suggests that the absent-mindedness measure, the CFQ, does in fact contain a unique factor (i.e. cognitive vulnerability) that is not shared with traditional trait measures (Merckelbach et al., 1996).

Although a significant relationship was also found between absent-mindedness and depressive symptoms, this relationship disappeared when the influence of trait variables were controlled for. These findings are consistent with Power's (1988:140) speculation that the "CFQ is a measure of vulnerability to anxiety, but not to depression". However, when Merckelbach et al (1996) examined absent-mindedness scores in people with depressive and anxiety disorders (study 3), they found that CFQ scores were significantly related to symptom severity scores in anxiety as well as depressive disordered subjects. Moreover, subjects with depression actually scored significantly higher on the CFQ than subjects with anxiety disorders (e.g. generalised anxiety, panic, and obsessive-compulsive disorder). This finding is in complete contrast to Merckelbach et al's (1996) conclusions from their first study; that absent-mindedness is more closely related to anxiety than depression.

Perhaps, as Merckelbach et al (1996) suggest, absent-mindedness is related to clinical depression, but not sub-clinical depression. Alternatively, it might be the case that the subjects with depression suffered from comorbid anxiety symptoms and this confounded the results of their study (Merckelbach et al., 1996). Given that independent measures of depression and anxiety were not administered to the depressive subjects, no clear-cut explanation for this discrepancy in findings is available. Thus, further research that examines the precise nature of the relationships among depression, anxiety, and absent-mindedness is warranted.

With regards to possible explanations for the relationship between absent-mindedness, life stress, and subsequent psychopathology, Broadbent et al (1982) speculated that highly absent-minded individuals are less proficient in employing active and direct coping strategies than their counterparts when exposed to stress. Alternatively, Power (1988) proposed "that the CFQ measures a proneness to the intrusion of automatic processes into

ongoing conscious processing" (p. 135). For instance, in non-stressful, normal situations, these intrusions would probably be relatively benign. However, in stressful or threatening circumstances, these intrusions may be more anxiety-provoking, or negative in content. This idea of automatic processes intruding on cognitive functioning is similar to the "automatic thoughts" biases, mentioned by Beck (e.g. Beck et al., 1979; cf. Power, 1988), which were later documented in the laboratory with people that suffer from phobic and depressive disorders (e.g. Eysenck, 1982; cf. Merckelbach et al, 1996).

In addition, Matthews and Wells (1988) found that the relationship between absent-mindedness and anxiety was contingent on the two variables independent correlations with self-consciousnes. In fact, self-consciousness exhibited the strongest correlation with the CFQ when controlling for other influences. According to Matthews and Wells (1988) these results, together with Broadbent et al's (1982) and Broadbent, Broadbent, and Jones (1986) findings that highly absent-minded individuals have difficulty coping with stress, suggest that this difficulty occurs because self-directed attentional processes (i.e. self-consciousness) interfere with an absent-minded individual's strategies for coping.

Although Power (1988) argues that the results of his study are consistent with the interpretations offered by Matthews and Wells (1988) and Broadbent et al (1982, 1986), he acknowledges that all these suggested interpretations are in need of more extensive testing.

2.7.3. Dissociation, fantasy proneness, absent-mindedness, and mental health

As mentioned in a previous section, significant overlaps have been found between dissociation and fantasy proneness on the one hand, (e.g. Merckelbach et al., 1999, 2000c; Pekala et al., 1999/2000; Rauschenberger & Lynn, 1995; Waldo & Merritt, 2000) and dissociation and absent-mindedness on the other hand (e.g. Merckelbach et al., 1999, 2000b, 2002). Moreover, fantasy proneness and absent-mindedness have both been found to tap into dissociative factors assumed to be indicative of severe psychopathology (i.e. dissociative states, depersonalisation) even though these two correlates are assumed to be relatively benign (Merckelbach et al., 1999).

One possible explanation for these findings (as has been previously mentioned) is that the DES is not a suitable screening device for dissociative pathology – especially in non-clinical populations (Merckelbach et al., 1999, 2000a). This possibility is consistent with the claim made by several researchers' (e.g. Cardena, 1994; Frankel, 1990, 1996; Ross, 1989; Singer & Sincoff, 1990) that at present, the concept of dissociation is too broad and thus, poorly defined. If the concept is badly defined, the utility of instruments used to measure dissociation (i.e. DES) may be extremely flawed. On the other hand, reliability and validity data regarding the DES (e.g. Bernstein & Putnam, 1986; Carlson & Putnam, 1995; Frischholz et al., 1990) indicate it to be a sound psychometric measure of dissociative experiences.

However, another possibility that has yet to be thoroughly considered and tested is; that fantasy proneness and/or absent-mindedness may actually be predictors of dissociative pathology when found in individuals also high in dissociative experiences. In other words, rather than being benign artefacts of dissociative experiences as measured by the DES, they might both play a causal (or at least, a mediating) role in the relationship between childhood trauma and dissociative pathology. Perhaps, as Putnam (1989) suggests, fantasy proneness is an important antecedent of dissociation.

Furthermore, perhaps fantasy proneness is only predictive of heightened dissociative tendencies in individuals who have experienced traumatic or aversive childhood events. This hypothesis is in line with Rhue & Lynn's (1987a) findings that the two disparate antecedent pathways to fantasy proneness are, for the most part, completely independent of one another. Also consistent with this speculation, Pekala et al (1999/2000) found that fantasy proneness was just as important as childhood abuse in predicting dissociation. Moreover the effects of childhood abuse and fantasy proneness on dissociative experiences were found to be largely additive, rather than interactive. On the other hand, perhaps fantasy proneness does not lead to dissociative psychopathology when there is no history of childhood trauma. This might explain why several studies (e.g. Lynn & Rhue, 1986, 1988; Rhue & Lynn, 1987a, 1987b) found that only a minority of fantasisers (20-35%) exhibited signs of significant psychological maladjustment and/or dysfunction. It might also explain

why the fantasisers in Waldo & Merritt's (2000) had lower mean DES scores than the entire screening sample.

Consistent with the above suppositions, one might also expect that when high levels of dissociative experiences are found in individuals without high levels of fantasy proneness, these individuals will be less vulnerable to severe dissociative psychopathology, or perhaps be more vulnerable to other types of psychopathology that have been found to share dissociative symptomatology (e.g. depression, anxiety, borderline personality disorder). This contention is in line with Pekala et al's (1999/2000) proposition "that individuals who are abused but not fantasy prone may be more likely to develop borderline personality disorder without a concurrent dissociative disorder" (p. 109). However, given the limitation that most of the research in this area (including the present study) has relied on the use of non-clinical populations', caution needs to be exercised in making such claims. Thus, perhaps at the very least, non-clinical populations with high levels of dissociation, fantasy proneness and/or absent-mindedness (in isolation or combined) are at an increased risk for psychopathology in general, rather than dissociative disorders per se Perhaps, for instance, dissociative psychopathology constitutes a further step in the causal model that is more commonly found in clinical populations.

To date, there appears to be only two studies (e.g. Rauschenberger & Lynn, 1995; Waldo & Merritt, 2000) that have examined the relationship between fantasy proneness and dissociative experiences with regards to current dissociative psychopathology. In a large study (n=604) conducted on psychology undergraduates, Rauschenberger and Lynn (1995) found that high fantasisers reported more dissociative experiences (DES) and symptoms (DDIS) than medium fantasisers. However, none of the participants (including the high fantasisers) in this study meet the diagnostic criteria for a dissociative disorder. Conversely, using both the normal 28-item DES and the pathological version of the DES (DES-T; Waller, Putnam, & Carlson, 1996) on a non-clinical population, Waldo and Merritt (2000) found that compared to controls, high fantasisers had significantly higher DES and DES-T scores. Moreover, the high fantasisers were significantly more likely to be placed within the pathological dissociative taxon (i.e. 9 out of 19 fantasisers compared to 0 controls).

Although Rauschenberger and Lynn (1995) tested whether fantasy proneness was related to dissociative symptoms, they did not compare high fantasisers who had received a past or present DSM-IV diagnosis on the SCID-I with individuals also high in dissociation. For instance, perhaps the reason why only 29% of the fantasisers in their study received a current DSM-III-R diagnosis was directly related to the percentage of individuals who were also high on dissociation? Rauschenberger and Lynn (1995) did however acknowledge that the finding that 50% of the fantasisers reported a past or present episode of major depression was an interesting parallel, given that depression "is the most common comorbid symptom" found in people with dissociative disorders. Clearly, more research examining the relationship among dissociation, fantasy proneness, and psychopathology is necessary.

In terms of the relationship among dissociation, absent-mindedness, and various measures of mental health, an extensive (exhaustive) review of the literature revealed no available research. Likewise, the author is not aware of any research (clinical or non-clinical) that has examined the inter-relationships among dissociation, fantasy proneness, absent-mindedness, and mental health. Thus, further research is this area is warranted.

2.7.4. Measuring general mental health

In this study, the General Health Questionnaire (GHQ-12) was used to measure current general mental health. General mental health typically refers to the psychological and physical health (or well-being) of an individual (Goldberg & Williams, 1988). Although this scale purports to measure overall stress and general well-being, it was originally designed as a means of identifying individuals that may have high levels of psychological distress in psychiatric populations (e.g. Goldberg & Blackwell, 1970). Thus, "well-being" is typically viewed as being synonymous with the concept of "general mental health" and, both these terms are often used interchangeably within the research literature. Although the original GHQ contained 60-items (i.e. GHQ-60), several shortened versions of the GHQ (i.e. the GHQ-30, GHQ-28. GHQ-20, and the GHQ-12) are more commonly used in current research and practice (Banks, Clegg, & Jackson, 1980).

The GHQ-12 was chosen for this particular study as it focuses specifically and solely on measuring negative psychological well-being, and thus on estimating the severity of psychiatric illness in groups or individuals. Its shortness also makes it a more practical instrument of choice in that it is user-friendly and less time consuming to complete. The GHQ-12 has been used extensively across a range of different settings and cultural groups (e.g. Donah, 2001; Goldberg & Blackwell, 1970; Goldberg & Williams, 1988; Jacob, Bhugra, & Mann, 1997; Schmitz, Kruse, & Tress, 1999; cited by Montazeri, Harirchi, Shariati, Garmaroudi, Ebadi, & Fateh, 2003) and has been translated into several different languages (e.g. Chan, 1993; Doy & Minowa, 2003; Politi, Piccinelli & Wilkinson, 1994; Quek, Low, Razack & Loh, 2001; see Montazeri et al (2003) for references).

Scores on the GHQ-12 have been found to be unrelated to age, marital status, and job level (Banks et al., 1980). However, Banks et al (1980) found that GHQ-12 scores tend to be higher (indicating poorer mental health) in unemployed individuals. Moreover, although no significant differences were found between samples of adult employees and unemployed youths (16-year school leavers) on the GHQ-12 in Banks et al (1980) study, a significant difference was obtained in the employed youth sample; with females scoring higher than males.

2.8. The present study

2.8.1. Justification

The findings of the present study are imperative for two main reasons. Firstly, if these "so-called" benign personality traits are found to overlap extensively with pathological features of dissociative experiences, the utility of screening tools used to measure the concept of dissociation are extremely questionable (Merckelbach et al., 2000a). This not only poses major theoretical issues regarding how dissociation is currently conceptualised, but has major practical and clinical significance. For instance, the use of the commonly utilised DES as a screening tool (especially in non-clinical research), could lead to a high rate of false positives for the diagnosis of dissociative disorders. Secondly, the findings of the current study are important with regards to current research exploring the relationship

between dissociative experiences and autobiographical memory accounts of childhood trauma. In particular, recent studies (e.g. Hyman & Billings, 1998; Johnson et al., 1995; Merckelbach et al., 2000a, 2000b) have found that individuals with high levels of dissociative experience, fantasy proneness, and absent-mindedness appear to be more vulnerable to memory recall errors (i.e. distortions, confabulations) than individuals with lower levels of the three phenomena when it comes to providing self-reports of past trauma.

Collectively then, these two implications have major significance, both for research and clinical practice. For instance, if these personality characteristics are benign and overlap significantly, the current conceptualisation of dissociation needs to be re-evaluated and alternative measures of dissociation need to be explored. If on the other hand, these traits are not benign, the DES may still be a useful screening tool of dissociative pathology. However, if this is the case, self-report measures of trauma and other autobiographical events are probably not appropriate for exploring the relationship between trauma and dissociative phenomena, given that these personality traits are commonly found to correlate with an increased susceptibility to memory recall errors. Thus, as a first step in determining whether these personality traits each make a significant contribution pathologically, the present study aimed to examine the relationship among these personality correlates of dissociation in order to determine the relative contributions each variable makes to predicting psychological distress.

2.8.2. Aims and Objectives

The present study was conducted to examine the relationship among dissociative experiences, fantasy proneness, absent-mindedness, and general mental health. The following hypotheses were tested:

1. The degree of dissociative experiences is positively related to the degree of fantasy proneness and absent-mindedness.

2. The degree of absentmindedness is directly related to the degree of fantasy proneness.

3. High levels of dissociative experiences, fantasy proneness and absent-mindedness are independently linked to high levels of psychological distress in non-clinical populations.

4. Females will have higher levels of overall absent-mindedness than males.

5. There will be no gender differences in the nature of, or degree of, dissociative experiences and fantasy proneness.

6. The degree of dissociation will systematically decrease with increases in age. In other words, dissociation and age will be inversely related.

7. The degree of absent-mindedness will systematically decrease with increases in age (i.e. they will be inversely/negatively related).

8. NZ European/Pakeha individuals will have lower levels of dissociative experiences than Māori, or Māori/Pakeha individuals, who in turn, will have lower levels of dissociative experiences than Asian individuals.

Additionally, general aims of the study were:

1. To explore whether there are any cultural differences in the degree of fantasy proneness and absent-mindedness within a New Zealand sample population.

2. To explore whether the scales used to measure these three phenomena measure three distinct psychological constructs (i.e. contribute unique variance) when predicting general mental health scores.

CHAPTER THREE: METHODOLOGY

3.1. Method

The self-report method of survey research design was utilised in the present study. Survey designs are the most effective method for testing large samples of participants with minimal effort and are not as expensive or as time-consuming as more in-depth face-to-face interviewing procedures (Coolican, 1994). Given the anonymity of the questionnaire, it is an ideal method of gathering sensitive information (i.e. covert events) from participants, thereby encouraging open and honest responses (Sunderland, Harris, & Baddeley, 1993).

3.2. Sample/Participants

The questionnaire was administered to 99 university students, the majority of which were enrolled in an introductory psychology course at the Albany campus of Massey University. Three of the students did not provide sufficient data for the analyses. Thus, the final sample consisted of 96 students. There were 71 women and 25 men. Ages ranged from 17 to 57 years, with a median age of 21 years (SD=9.62). The majority (65.6%) classified themselves as NZ European/Pakeha; 12.5% as Māori, Māori/Pakeha, or Pacific Islander; 14.6% as Asian; and 7.3% as Other (Table 1).

Table 1: Demographic characteristics of the study sample (n = 96)

Demographics	Frequency	Percentage (%)
Gender		
Male	25	26.0
Female	71	74.0
Ethnicity		
NZ European/Pakeha	63	65.6
Maori/Pacific Islander	12	12.5
Asian	14	14.6
Other	7	7.4
Median Age	21	
Age Range	17-57	
Standard deviation	9.62	

3.3. Measures

Four self-report instruments were utilised in the questionnaire (Appendix A3).

3.3.1. Dissociative Experiences Scale (DES)

Bernstein and Putnam's (1986) Dissociative Experiences Scale (DES) is comprised of 28 items that assess various dissociative phenomena in daily life, such as disturbances in identity, memory, and awareness – including feelings of derealisation and depersonalisation (e.g. "some people have the experience of finding themselves in a place and having no idea how they got there"). Participants indicate on 100mm visual analogue scales (anchors: 0 = not at all; 100 = very much) the percentage of time that each of the experiences listed applies to them. Scores are averaged across individual items to obtain a mean DES score. Merckelbach and colleagues (1999, 2000b, 2000c, 2002) report mean DES values of between 17.1 and 24.2 (SD's = 10.6 – 12.1) for samples of undergraduate students.

Carlson and Putnam (1993) report adequate test-retest correlation coefficients ranging between 0.78 and 0.84 for the DES. With regards to internal consistency, acceptably high split-half coefficients of 0.83 (Bernstein & Putnam, 1986) and 0.93 (Pitblado & Sanders, 1991) have been reported. Moreover, sufficiently high Cronbach alpha's of 0.90 (Fischer & Elnitsky, 1990) and 0.95 (Frischholz et al., 1990) have also been obtained.

3.3.2. Creative Experiences Questionnaire (CEQ)

Merckelbach et al's (1998) Creative Experiences Questionnaire (CEQ) comprises 25 dichotomous (yes/no) items that measure aspects of fantasy proneness such as imagination, daydreaming, and intense fantasies. Items on the CEQ were derived from the extensive case descriptions of fantasy proneness carried out by Wilson and Barber (1983). Illustrative examples include: "As a child, I had my own make believe friend or animal"; "I spend more than half the day (daytime) fantasizing or daydreaming" and "I often confuse fantasies with real memories". Whilst some of the items in the CEQ refer to the developmental antecedents of fantasy proneness, others pertain to one's profound

involvement in daydreaming and fantasy and, others still to the concomitants and consequences of fantasy involvement (Merckelbach et al., 2001). A CEQ total is obtained by summing the number of yes-answers (0-25 range). High scores are indicative of higher levels of fantasy proneness. Mean values of between 7.4 and 8.8 (SD's = 3.6 – 4.2) have been reported by Merckelbach and colleagues (1999, 2000b, 2000c, 2002).

Merckelbach et al (2001) summarise evidence from a number of studies that support the reliability and validity of the CEQ. With regards to test-retest reliability, an acceptably high correlation coefficient of 0.95 was obtained. A satisfactory internal consistency reliability coefficient (Cronbach alpha) of 0.72 was also reported.

3.3.3. Cognitive Failures Questionnaire (CFQ)

Broadbent et al's (1982) Cognitive Failures Questionnaire (CFQ) measures absent-mindedness and failures of attention. It contains 25 items that describe everyday lapses, slips and minor blunders (e.g. "do you bump into things?" or "do you forget where you put something like a newspaper or a book?"). On a 5-point Likert scale, participants indicate how frequently they have experienced each cognitive failure in the past six months (anchors: 0 = never; 4 = very often). A total CFQ score (range 0-100) is obtained by summing all the scores.

Mean CFQ values of 35.0 (car factory production workers) and 52.5 (student nurses) were obtained by Broadbent et al. (1982). Subsequent studies (e.g. Hood, MacLachlan, & Fisher, 1987; Jones & Martin, 2003; Matthews et al., 1990; Merckelbach et al., 1996; 1999; 2000b; 2002; Power, 1988) report mean values ranging from between 40.3 (Power, 1988) for a sample of mature students (SD=12.0) and 48.6 (Jones & Martin, 2003) for a sample of undergraduate first years (SD=13.1).

With regards to the CFQ's psychometric properties, Merckelbach et al (1996) reported adequate internal consistency in two separate sample studies (Cronbach's alpha = 0.75 and 0.81 respectively). These reliability coefficients are comparable to Broadbent et al's (1982) findings (i.e. .89). Merckelbach et al (1996) found the CFQ to have a sufficiently high test-

retest reliability of .83. This is consistent with previously reported test-retest reliability scores of .82 (Broadbent et al., 1982), and .83 (Power, 1988).

3.3.4. General Health Questionnaire (GHQ)

Goldberg's (1978) GHQ-12 measures work stress and general mental well-being. It is comprised of 12 items that assess whether or not, and to what degree, individuals have experienced a particular behaviour and/or symptom over the past few weeks. Two methods of scoring the GHQ-12 are commonly utilised; the 'Likert-Method' and the 'GHQ-Method'. With the 'Likert-Method', responses are weighted as 0, 1, 2, or 3 (i.e. anchors: 0 = more/better than usual; 3 = less than usual for positively worded items, and anchors 0 = not at all; 3 = much more than usual for negatively worded items). A total GHQ-12 severity score (range 0-36) is obtained by summing up all 12 item scores. Higher scores are indicative of greater levels of psychological distress or psychiatric "caseness". Given that the Likert Method has been shown to produce a less skewed distribution than other scoring methods (including the GHQ-Method) (Goldberg & Williams, 1988) and this was the method of scoring chosen for the analyses of the current study.

Banks et al (1980) report mean GHQ-12 values of 8.7 (SD = 5.1) and 14.1 (SD = 6.8) for employed versus unemployed 16-17 year-old school leavers; and 9.0 (SD = 4.1) and 15.3 (SD = 6.9) for employed (engineering plant workers) versus unemployed (men only) adults.

Based on an original validation study of the GHQ-60, Goldberg and Williams (1988) reported that the GHQ-12 had a test-retest reliability of .73, and a split-half reliability of .83. Other studies on the GHQ-12's internal consistency, have also reported acceptably high Cronbach alphas of between .82 and .92 (Banks et al., 1980) and an even higher split-half reliability of 0.95 was obtained in a study by (REF). Criterion validities (i.e. specificity = 78.5%; sensitivity = 93.5%) on the GHQ-12 were also reported from the original validation study (Goldberg & Williams, 1988). Moreover, subsequent studies conducted by Goldberg and Williams (1988) yielded criterion validities ranging between 71-93% for specificity, and between 71-91% for sensitivity.

3.3.5. Demographics

The final section consisted of demographic questions. Respondents were asked to indicate their age, gender, and which ethnic group or group(s) they identified with (NZ European/Pakeha, Māori, Pacific Island, Asian, or Other).

3.4. Procedure

Prior to participant recruitment, approval for the research was sought and granted (Appendix E) by the Massey University Human Ethics Committee (Albany). Students were invited in class to participate in the research the following week. A choice of attending one of two possible time slots on two separate days was provided. Participation was voluntary. A week prior to, and directly before data collection commencement, an information sheet (Appendix A) clearly articulating the general purpose of the research project, as well as the extent of participation was provided to the students. The information sheet also emphasised that all responses were confidential and anonymous given that no identifiable personal information would be gathered. The questionnaire (Appendix B) took about twenty to thirty minutes to complete.

Plain envelopes in which to put their completed questionnaires were made readily available to the students upon completion of the questionnaires. If requested, blank envelopes for students to self-address for the mailing out of research summary findings were also provided.

3.5. Data analysis

All quantitative data analyses were carried out using the Statistical Package for Social Sciences (SPSS) for Windows Version 12. Descriptive statistics were used to analyse the demographic characteristics of the study sample, and to explore the distribution and skewness of the questionnaire measures. Cronbach alphas were obtained in order to determine the internal reliability of each individual scale.

Multivariate analyses of variance (MANOVAS) were conducted to examine differences on the continuous variables between groups. Men were compared to woman on dissociative experiences, fantasy proneness, absent-mindedness, general mental health, and age. The three largest ethnic groups of the sample (NZ European, Māori and/or Māori/Pakeha, and Asian) were also compared on the above variables.

Wilks' Lamda multivariate test was used to determine if there were significant differences between groups on each of the continuous variables. Levene's test of equality of error variances were computed to ascertain whether or not there were significant differences between group variances on each of the variables. If the null hypothesis of equal variances was rejected, the conservative values (Games-Howell corrections on levels of significance) were used from the Post-hoc (or univariate) comparisons of group means.

Pearson product-moment correlations (two-tailed) were conducted to explore the relationships between dissociative experiences, fantasy proneness, and general mental health, along with Bonferroni corrections for levels of significance. Spearman's Rho correlations were computed solely to explore the relationships between each of the three predictor variables with regards to age.

To determine whether dissociative experiences, fantasy proneness, and absent-mindedness contribute unique variance to participants' general mental health scores, a hierarchical regression analysis was conducted.

CHAPTER FOUR: RESULTS

4.1. Descriptive Statistics

Table 2 displays the means, medians, standard deviations, ranges, and skewness of the data for each of the continuous variables and/or measuring instruments.

Table 2: Means, medians, standard deviations (SD's), range, and skewness on dissociation (DES), fantasy proneness (CEQ), absent-mindedness (CFQ), mental health (GHQ), and age (n = 96)

Variable	Mean	Median	SD	Range	Skewness
DES	19.92	17.50	12.21	1.79-57.50	.981
CEQ	10.05	10.00	4.75	1-22	.218
CFQ	47.87	46.00	15.39	19-94	.584
GHQ	12.90	12.00	5.25	3-27	.622
AGE	25.50	21.00	9.62	17-57	1.42

Histograms and box plots were computed on each of the measures in order to explore whether the assumptions of normality essential for inferential analysis were met (see Appendix C).

Given that scores on the DES, CFQ, and GHQ were positively skewed, square root transformations were computed to obtain normal distributions, and to minimise the influences of outliers (Tabachnick & Fidell, 1996). The distribution of CEQ scores was within the normal ranges, so raw data (i.e. the sum of valid responses) were used in the computations of CEQ scores. Thus, any missing data in this instance was treated as "0" or "no". Because the distribution of age data were extremely positively skewed (>1), and remained so even after correction attempts, non-parametric correlational analyses (i.e. Spearman's Rho) were the only findings meaningful enough to be utilised in this study with regards to age.

Because the percentage of participants that identified themselves as Pacific Islander (1%) or Other (7.1%) was small, and those in the Other category belonged to various different ethnic groups, comparisons between these ethnic groups would not have yielded meaningful information. Thus, ethnicity was regrouped to include comparisons between NZ European/Pakeha, Māori or Māori/Pakeha, and Asian only.

4.2. Inferential Statistics

4.2.1. Reliability

Coefficients of internal consistency (Cronbach's alphas) indicated that there were adequate levels of reliability on each of the scales; DES (α = .93), CEQ (α = .80), CFQ (α = .91), and GHQ (α = .82). These reliability coefficients are comparable to previous findings (e.g. Frischholz et al., 1990; Merckelbach et al., 2001a; Broadbent et al., 1982; Banks et al., 1980), and are above the value of .60 recommended for undertaking psychological research (Nunnally & Bernstein, 1994). Moreover, both the DES and CFQ yielded reliability coefficients above the clinical testing value of .85 or higher recommended by Rosenthal and Rosnow (1991:50; cited by Carlson & Putnam, 1993). This finding suggests that these two measures are dependable psychological screening tools.

4.2.2. Multivariate Analyses of Variance (MANOVA)

Multivariate analyses of variance (MANOVAs) regarding gender differences showed that although females obtained higher mean CFQ scores (M = 48.21, SD = 13.65) than males (M = 46.08, SD = 13.65) this difference did not reach statistically significance $F(5,90) = .877$, $p = 0.5$; Wilks $\lambda = 0.954$ (see Appendix D). There were no significant differences between men and women in mean scores on any of the dependent variables. The conduction of Post hoc tests were not necessary for gender, given that there were only two groups, and the differences in means were not statistically significant.

The one-way MANOVA regarding differences between ethnic groups revealed significant differences, $F(5,82) = 2.63$, $p < .01$; Wilks' $\lambda = 0.743$. Table 3 examines the differences between ethnic groups on general mental health, dissociation, absent-mindedness, fantasy proneness, and age.

Table 3: MANOVA comparing the three ethnic groups (NZ European/Pakeha, Māori, and Asian) on general mental health (GHQ), dissociation (DES), absent-mindedness (CFQ), fantasy proneness (CEQ), and age.

Source of Variation	Sum of Squares	df	Mean Sum of Squares	*F*	Partial Eta Squared
IV: Ethnicity					
GHQ	1.22	2	.61	1.19	.027 (.004)
Error	44.08	86	.51		
Total	1,123.01	89			
DES	5.58	2	2.79	1.56	.035 (.012)
Error	154.29	86	1.79		
Total	1,726.07	89			
CFQ	1,716.42	2	858.21	4.40*	.093 (.072)
Error	16,780.48	86	195.12		
Total	214,816.00	89			
CEQ	105.43	2	52.72	2.45	.054 (.032)
Error	1,854.07	86	21.56		
Total	10,464.00	89			
AGE	246.35	2	123.17	1.30	.029 (.007)
Error	8,164.66	86	94.94		
Total	66,820.00	89			

* $p < .05$

Note: Values in parentheses are Adjusted R Squares

The means and standard deviations for each ethnic group on each of the dependent variables are displayed in Table 4. Post hoc (Univariate) tests revealed that there were no significant differences in mean scaled scores on the GHQ, DES, CEQ, or age. The CFQ (i.e. absent-mindedness) score was the only variable demonstrating a statistically significant difference between ethnic groups (see Table 3).

Table 4 indicates that Asians had a significantly lower mean absent-mindedness (CFQ) score (M=37.36, SD=9.87) than NZ European/Pakeha (M=48.08, SD=15.09), and Maori (M=52.33, SD=11.27), $p < .01$. Although NZ European/Pakeha had lower mean absent-mindedness scores than Maori, the difference was not statistically significant, $p = .508$.

Table 4: Comparisons of Means and SD's for the three ethnic groups (NZ European/Pakeha, Māori, and Asian) on general mental health (GHQ), dissociation (DES), absent-mindedness (CFQ), fantasy proneness (CEQ), and age.

	NZ European/Pakeha (E) n = 63		Maori (M) n=12		Asian (A) n=14		MANOVA	
Variable	M	SD	M	SD	M	SD	F	Games-Howell
GHQ	3.41	.68	3.71	1.02	3.61	.56	1.19	—
DES	4.07	1.32	4.81	1.49	4.23	1.32	1.56	—
CFQ	48.08	15.09	52.33	11.27	37.36	9.87	4.40*	E=M>A
CEQ	9.19	4.91	10.00	4.22	12.21	3.58	2.45	—
AGE	26.56	10.79	21.75	6.25	24.71	6.29	1.30	—

*p < .05

4.2.3. Correlational Analysis

Pearson product-moment correlations between each of the scale variables are shown in Table 5. As can be seen, significant ($p < 0.001$) positive correlations were found between all the measurement instruments.

Table 5: Pearson product-moment correlations between dissociation (DES), fantasy proneness (CEQ), absent-mindedness (CFQ), and general mental health (GHQ) (n = 96).

	DES	CEQ	CFQ
CEQ	.56***		
CFQ	.54***	.38***	
GHQ	.37***	.35***	.37***

*** p < .001 (two-tailed)

Note: N's vary due to missing values

The strongest (albeit moderately strong) relationships were between dissociation and fantasy proneness (DES and CEQ respectively) on the one hand, and dissociation and absent-mindedness (DES and CFQ respectively) on the other hand (i.e. $rs > 0.50$).

A Weak- Moderate correlation (i.e. $rs > 0.30$) was found between fantasy proneness (CEQ) scores and absent-mindedness (CFQ) scores ($r = .38$). Likewise, general mental health (GHQ) scores were moderately related to scores on: dissociation (DES), fantasy proneness (CEQ), and absent-mindedness (CFQ), ($r = .37, .35$, and $.37$ respectively).

Given that the age data were greatly skewed, Spearman's Rho correlations were computed to compare each of the four continuous variables with age. Table 6 shows that weak-moderate inverse (negative) relationships were found between age and dissociation (r = -.37) on the one hand, and age and absent-mindedness (r = -.24) on the other hand. Thus, in general, the older the participant, the lower the degree of dissociative experiences and absent-mindedness.

Table 6: Spearman's Rho correlations comparing dissociation (DES), fantasy proneness (CEQ), absent-mindedness (CFQ), and general mental health (GHQ) to age only (n = 96).

	DES	CEQ	CFQ	GHQ
AGE	-.37**	-.12	-.24*	-.10

*p < .05 **p < .01 (two-tailed)

4.2.4. Multiple Regression

A hierarchical linear regression analysis was conducted to assess the effects of dissociation, absent-mindedness, and fantasy proneness on general mental health (Table 7).

In Step One, dissociation was assessed. As expected, dissociation predicted general mental health (β =.37, p<.001) in a positive direction, such that the higher the dissociation, the greater the level of psychological distress. In this initial stage, dissociation accounted for 13.6% of the variance in general mental health, R^2 =.136, F(1,95) = 14.99, p<.001.

In Step Two, absent-mindedness was entered into the equation. Dissociation still made a significant contribution (p<.05), but accounted for less variance (4.7%) in general mental health. Absent-mindedness was predictive of general mental health (β=.25, p<.05) accounting for 4.9% of variance in general mental health, R^2 =.179, F(2,94) =10.25, p <.05. This effect was in the expected direction: the higher the absent-mindedness, the greater the level of psychological distress.

When fantasy proneness was added in Step Three however, it did not contribute significant variance to general mental health (β =.18, p =.115). In the final model, absent-mindedness

contributed the largest percentage of variance in general mental health (4.2%, p <.05). However, the amount of variance contributed by fantasy proneness (2.6%) and, dissociation (1.5%) did not reach significant levels (p =.115, and p =.230 respectively). The completed model accounted for 20.1% of variance in general mental health (GHQ) scores, R^2 =.201, F(3,93) =7.79, p <.001.

Table 7: Hierarchical Regression Analysis for dissociation (DES), absent-mindedness (CFQ), and fantasy proneness (CEQ) on general mental health (GHQ-12) (n = 96).

Model	Unstandardised Coefficients		Standardised Coefficients		
	B	Std. Error	Beta	*t*	Partial r^2
Dependent Variable: GHQ					
Step One (R^2 = .136)					
(Constant)	2.671	.229		11.674***	
DES	.198	.051	.369	3.871***	.136
Step Two (R^2 = .179)					
(Constant)	2.393	.257		9.303***	
DES	.128	.060	.237	2.140*	.047
CFQ		.006	.245	2.212*	.049
Step Three (R^2 = .201)					
(Constant)	2.368	.256		9.265***	
DES		.066	.149	1.207	.015
CFQ		.006	.225	2.030*	.042
CEQ		.017	.179	1.593	.026

* p < .05 ***p < .001

CHAPTER FIVE: DISCUSSION

In this section, a summary of the results will be presented. Following on from this, implications of the findings of the study will be explored. Lastly, limitations of the study will be discussed.

5.1. Summary of Results

The present study was designed to examine the relationship among dissociative experiences, fantasy proneness, absent-mindedness, and general mental health in a non-clinical population.

5.1.1. Dissociative Experiences

The mean score for the Dissociative Experiences Scale (DES) is comparable to mean values reported by Merckelbach and colleagues (1999, 2000b, 2000c, 2002) for samples of undergraduate students (see table 2 for means and standard deviations). In line with previous research findings (e.g. Bernstein & Putnam, 1986; Ross et al., 1990; Spitzer et al., 2003) and the researcher's expectations, no significant gender differences were found in the degree of dissociative experiences. In contrast with the researcher's own expectations and Barker-Collo's (2001) findings, no cultural differences were found between NZ Europeans/Pakeha; Maori, or Maori/Pakeha; and Asian individuals with regards to dissociative experiences.

Previous studies (e.g. Bernstein & Putnam, 1986; Ross, Ryan, Anderson, Ross, & Hardy, 1989a; Ross et al., 1990) have consistently found a negative correlation between scores on the DES and age. Given the findings of these studies, it was hypothesised that the degree of dissociative experiences would systematically decrease with increases in age. Consistent with these previous studies and the researcher's expectations, the results were significant; the older the participant, the lower the degree of dissociation (see table 6).

5.1.2. Fantasy Proneness

Although the mean value of the Creative Experiences Questionnaire (CEQ) was slightly higher than typical, it is relatively comparable to mean values obtained by Merckelbach et al (1999, 2000b, 2000c, 2002) in samples of undergraduate students. Consistent with the researcher's own expectations and the previous research findings of Merckelbach et al (2001), no significant age or gender differences were found with regards to fantasy proneness. Given an apparent absence of previous studies that have examined whether cultural differences exist with regards to fantasy proneness, a general aim of the current study was to examine whether there were any cultural differences in fantasy proneness within a New Zealand study sample. Although preliminary, the results indicated there to be no significant cultural differences in fantasy proneness among NZ European/Pakeha, Māori, or Māori/Pakeha, and Asian individuals.

5.1.3. Absent-mindedness

The mean value for the Cognitive Failures Questionnaire (CFQ) is comparable to the mean value obtained by Jones and Martin (2003) in a sample of 58 undergraduate first year students (mean age = 20.7 years). Although there is a lack of research directly analysing whether absent-mindedness is influenced by differences in age, the preliminary research findings of Reason (1977, 1979) appear to indicate that absent-mindedness systematically decreases with increases in age. Thus, it was hypothesised that the degree of dissociative experiences decreases systematically with increases in age. Consistent with previous face value findings and the researcher's expectations, a weak-moderate inverse relationship was found (see table 6).

Based on previous research findings (e.g. Jones & Martin, 2003; Pollina et al., 1992) indicating that females report significantly more cognitive failures than males, it was hypothesised that this would indeed be the case in the current study. Although females reported higher levels of absent-mindedness than males (see Appendix 5), contrary to the aforementioned study findings and the researcher's expectations however, no significant differences were found between males and females with regards to absent-mindedness.

In relation to whether absent-mindedness is influenced by cultural differences, previous research appears to be non-existent. Thus, the current study aimed to examine whether any culture differences in absent-mindedness existed within a New Zealand study sample. Although the mean CFQ values suggest that New Zealanders with Māori ancestory are more absent-minded than NZ European/Pakeha, these differences were not significant. Interestingly however, Asians were found to be significantly less absent-minded than both NZ European/Pakeha and Māori or Māori/Pakeha (see table 4).

5.1.4. General Mental Health

The mean value for the General Health Questionnaire (GHQ-12) is within the range of values obtained by Banks et al (1980) in samples of unemployed versus employed youths and adults. Consistent with the previous research findings of Banks et al (1980) no significant gender or age differences were found with regards to general mental health scores. Moreover, in keeping with previous research findings of the GHQ-12's utility cross-culturally (see Montazeri et al., 2003 for reviews) no significant cultural differences were obtained.

5.1.5. Dissociative experiences, Fantasy Proneness and Absent-mindedness

Keeping with previous research findings (e.g. Merckelbach et al., 1999, 2000b, 2000c, 2002), significant and relatively robust correlations were found between dissociative experiences and fantasy proneness on the one hand, and dissociative experiences and absent-mindedness on the other hand. In terms of the relationship between fantasy proneness and absent-mindedness, previous research findings are inconclusive. Whilst Merckelbach et al (1999, 2000b) found weak and non-significant relationships between fantasy proneness and absent-mindedness in three separate studies; in contrast, Merckelbach et al (2002) found a significant (albeit relatively weak) direct correlation between fantasy proneness and absent-mindedness. Given that Merckelbach et al's (2002) study sample was larger than the previous three studies, (i.e. more power to obtain a significant result) it was hypothesised that fantasy proneness and absent-mindedness would be directly related. Contrary to the earlier studies, yet consistent with Merckelbach et al

(2002) and the researcher's own expectation, a significant (albeit modest) correlation (r = 0.38) was indeed found between fantasy proneness and absent-mindedness.

5.1.6. Dissociative experiences, Fantasy Proneness, Absent-mindedness, and General Mental Health

In keeping with the majority of research on dissociative experiences in clinical and non-clinical populations and the researcher's own expectations, dissociation and general mental health were significantly correlated. In other words, high levels of dissociation are associated with high levels of psychological distress.

Despite a substantial amount of research (e.g. Lynn & Rhue, 1988; Lynn, Rhue, & Green, 1988; Rhue & Lynn, 1987b, 1989) providing evidence that psychological maladjustment and/or dysfunction is only true of a small minority of fantasisers; in contrast, Rauschenberger & Lynn (1995) found that the majority of fantasisers in their study had meet the DSM-IV criteria for either a past or present Axis I disorder. Moreover, half of these fantasisers indicated experiencing a past episode of major depression. Given this finding, overlaps between the scales used to measure dissociation and fantasy proneness, (e.g. Kihlstrom et al., 1994; Lynn & Rhue, 1988; Merckelbach et al, 1999) and subsequent studies demonstrating strong links between fantasy proneness and psychological disorders such as depression (e.g. Rauschenberger & Lynn, 1995) schizotypy, (e.g. Lynn & Rhue, 1988; Merckelbach et al., 2000c, 2001) and borderline personality disorder (e.g. Huff & Council, 1987; Waldo & Merritt, 2000), it was hypothesised that high levels of fantasy proneness are related to high levels of psychological distress.

Consistent with this hypothesis and the previous research findings of Rauschenberger and Lynn (1995) and Kihlstrom et al (1994), a significant and moderately strong correlation was found between fantasy proneness and general mental health. In other words, the greater the level of fantasy proneness, the greater the level of psychological distress.

Given an extensive amount of research evidence demonstrating a link between high levels of absent-mindedness and psychological maladjustment and/or dysfunction (e.g. Broadbent

et al., 1982; Matthews & Wells, 1988; Power, 1988) particularly with reference to mental illnesses such as depression (e.g. Merckelbach et al., 1996; Power, 1988) and anxiety (e.g. Broadbent et al., 1982; Merckelbach et al., 1996; Power, 1988), it was hypothesised that high levels of absent-mindedness are associated with high levels of psychological distress. Consistent with previous research and the expectations of the researcher, a significant and moderately strong relationship was found between absent-mindedness and general mental health. Thus, relatively robust relationships were found between all four of the continuous variables investigated in the current study.

In order to determine whether each of the three criterion variables make unique contributions to the variance in general mental health scores, a hierarchical regression analysis was conducted. Although the final regression model indicated that each variable made a unique contribution to the variance in general mental health scores, the only significant correlation was between absent-mindedness and general mental health. In other words, absent-mindedness still made a significant and unique contribution to general mental health scores when the potential overlapping effects of dissociative experiences and fantasy proneness were both controlled for. However, although dissociative experiences continued to make a significant unique contribution to general mental health when the effects of absent-mindedness were partialled out, it failed to make a significant contribution when fantasy proneness was added to the equation. Therefore, these results suggest that, dissociation as measured by the DES does not make any unique contributions to predicting general mental health scores (GHQ-12) above and beyond what it shares in common with fantasy proneness as measured by the CEQ. Likewise, fantasy proneness as measured by the CEQ does not make any unique contributions to predicting general mental health scores independent of what it shares in common with dissociation as indexed by the DES.

5.2 Implications of these findings

5.2.1. Dissociative experiences

Despite Barker-Collo's (2001) findings that Asian individuals reported higher DES scores than Māori individuals, who in turn scored higher on the DES than European/Pakeha, no

cultural differences were found between these cultural groups. Given that Barker-Collo's (2001) study sample was larger than the current study (i.e. 137 versus 96 university students), and consisted of a larger percentage of Māori and Asian individuals (i.e. 17.5% Māori versus 11.5% Māori, and/or Māori/Pakeha, and 17.5% Asian versus 14.6% Asian respectively), perhaps the current study failed to find a significant difference in DES scores between these groups because of low predictive power (i.e. Type II error).

Similarly, Barker-Collo (2001) ensured that the participants in her study specified the cultural group that they most identified with. However, in the present study, the participants were given the option of specifying the ethnic group or groups that they most identified with. Moreover, given that the individuals who identified themselves as Māori, or both Māori and NZ European/Pakeha were collectively analysed under one subgroup in the present study, differences between these groups may of confounded the results. For example, perhaps individual's that identify themselves as both Māori and Pakeha are less likely than those who identify strictly as Maori to be firmly entrenched in traditional Māori values and customs given the historical effects of European 'acculturation' on Māori individual's in New Zealand. Thus, as a result, specific DES items that tend to promote high scores from Māori individual's; given their relationship to culturally acceptable behaviours (see Barker-Collo, 2001) may not have been as highly endorsed in the current study. However, although not strictly comparable given likely differences between North American and New Zealand cultural groups, the present study is in line with Branscomb's (1991) findings of there being no cultural differences between Caucasian and African-American individuals in dissociative experiences.

In keeping with previous studies (e.g. Bernstein & Putnam, 1986; Ross et al., 1989, 1990) and the researcher's expectations, the degree of dissociative experiences systematically decreased with increases in age. This finding is also consistent with previous studies that have found that there is a tendency for late adolescents and young adults to obtain DES scores comparable to those found in psychiatric settings (e.g. Anguilo & Kihlstrom, 1993; Frischholz et al., 1991, 1992; Kihlstrom et al., 1994; Merckelbach et al., 1999).

Although the precise reason for this finding is unclear, as Carlson and Putnam (1993) suggested, there are three possible explanations why younger individuals tend to score higher on the DES. Firstly, perhaps younger adults do in fact have more dissociative experiences. In other words, similar to other psychiatric complaints such as schizophrenia (e.g. DeLisi, 1992), dissociative symptomatology and pathology may be more prevalent and chronic in younger adults. Alternatively, perhaps younger adults are more likely, or more willing to report such tendencies. In other words, maybe this tendency for younger adults to score higher on the DES (or conversely for older adults to score lower) is the result of self-reporting biases (i.e. social desirability). This explanation is consistent with Elzinga et al's (2002) finding that people who score low on measures of dissociation are more likely to respond in a socially desirable fashion and thus, may reduce or deny the extent of their dissociative experiences. Lastly, perhaps younger adults view their own experiences as being more synonymous with the items listed in the DES.

5.2.2. Fantasy Proneness

Although there is a paucity of research with regards to age and gender differences in fantasy proneness, consistent with the study findings of Merckelbach et al (2000) and as expected, no age or gender differences were found. Moreover, preliminary findings regarding cultural differences in fantasy proneness suggest that there are no cultural differences among NZ European, Maori, or Maori/Pakeha, and Asian individuals. The results of the current study coupled with Merckelbach et al's (2000) findings indicate that the CEQ has good discriminant validity given that its distribution does not appear to be effected by various interpersonal variables.

5.2.3. Absent-mindedness

As anticipated, the level of absent-mindedness was found to systematically decrease with increases in age. Although research in this area is lacking, the current finding is consistent with Reason's (1977, 1979) preliminary observations. Perhaps, as Reason (1993) argues, older adults tend to be less absent-minded from learning that such mistakes have brought with them costly or even dangerous consequences in the past. On the other hand, perhaps as Jones and Martin (2003) speculate, age differences in absent-mindedness are due to

systematic deviations from the veridical, given that self-report measures such as the CFQ are prone to systematic error (e.g. biases, memory distortions). For example, in line with findings on the distribution of dissociative experiences, (e.g. Elzinga et al., 2002) younger individuals might be more likely, or more willing, to report their experiences more realistically. In other words, perhaps older adults lower absent-mindedness scores are the result of responding in a socially desirable manner. However, results from Mercklebach et al's (2001) study suggest that the CFQ is not particularly susceptible to the self-reporting bias of social desirability. Hence, the precise reason why older adults tend to score lower in absent-mindedness remains unclear, and thus, warrants further investigation.

Based on the previous research findings of Jones and Martin (2003) and Pollina et al (1992) it was hypothesised that females would have higher levels of absent-mindedness than males. Contrary to these findings and the researcher's expectations however, no gender differences in the degree of absent-mindedness were found. Perhaps the sample size (particularly the lower number of male participants) was too small to yield a significant difference between the two genders in the current study. On the other hand, although Jones and Martin (2003) found that females had higher levels of absent-mindedness than males, given their small sample size (n=58) and lack of male participants (n=15), their findings are far from generalisable and tentative at best. Pollina et al's (2002) study however, was comprised of a large enough sample of both male (n=180) and female (207) undergraduate students. However, given that the effect sizes of the differences between males and females were relatively small in Pollina et al's (2002) study, findings in this area remain inconclusive and thus, warrant further investigation.

With regards to potential cultural differences in absent-mindedness within a New Zealand study sample, preliminary findings suggest that Asian individuals have lower levels of absent-mindedness than both NZ European/Pakeha and individuals with Māori ancestory. Given a lack of knowledge regarding the aetiology of absent-mindedness and an absence of research regarding cultural differences in absent-mindedness, one can only speculate as to why this is the case. However, given that Asian individuals are themselves comprised of many different ethnic and cultural groups (e.g. Chinese, Indian, Korean, Malaysian,

Phillipino) and given the small number of Asian participants in the study (n=14), these findings are not particularly generalisable (even to Asian undergraduate students in New Zealand) and, thus are very much open for consideration.

5.2.4. Fantasy Proneness and Absent-mindedness

As expected, the level of fantasy proneness was directly related to the level of absent-mindedness. Although this finding is in contrast to the findings of Merckelbach et al (1999) and Merckelbach et al (2000b), it is consistent with the study findings of Merckelbach et al (2002). Given that both the current study and Merckelbach et al's (2002) study had larger sample sizes than the previous three studies, these inconsistent results might be due, at least in part, to a lack of predictive power in the past. With regards to the significance of the relationship between these two variables, it appears that rather than being independent predictors of dissociative experiences, the interrelationships between these three variables are far more complex. Perhaps, given that the weakest interrelationship is between fantasy proneness and absent-mindedness, the relationship between fantasy proneness and absent-mindedness is mediated, at least in part, by the level of dissociative experiences. However, given that research is currently non-existent regarding the possible causal networks between these three variables, suggestions such as these are purely speculative.

5.2.5. Dissociative experiences, Fantasy Proneness, Absent-mindedness, and General Mental Health

The present findings that systematic increases in the levels of both fantasy proneness and absent-mindedness are related to systematic increases in psychological distress, are consistent with a diathesis-stress theory (e.g. see Kihlstrom et al., 1994; Monroe & Simons, 1991). In other words, these personality traits, when found in extremely high levels may constitute a diathesis or vulnerability to subsequent stress and psychopathology. Whether, given their strong connections with dissociative experiences, this vulnerable is to dissociative pathology specifically is beyond the scope of the present study given that there was no index of dissociative pathology. However, the present findings do suggest that individuals high in dissociative experiences, fantasy proneness, and absent-mindedness have an increased vulnerability to psychopathology in general.

Although the hierarchical regression analysis indicated that dissociative experiences and absent-mindedness were both related to psychological distress when each variable was held constant from the other, the final step of the model indicated that only absent-mindedness alone continued to predict psychological distress when the influences of the other two variables were controlled for. In other words, neither dissociative experiences nor fantasy proneness were independent predictors of psychological distress. These findings indicate that there are major overlaps between the scales used to measure these two constructs. This is consistent with the claim made by several critics of the DES (e.g. Kihlstrom et al., 1994; Spanos, 1996) that significant overlaps between the two scales used to measure these phenomena suggest that fantasy proneness is an artefact of dissociative experiences.

Although this finding suggests that the DES is an inappropriate screening tool of dissociative pathology, (particularly in non-clinical populations) given that fantasy proneness was also significantly related to poor general mental health, further research in this area is necessary before any firm conclusions can be made on this matter. Moreover, an extensive review of the literature regarding the psychometric properties of the DES, (e.g. see Bernstein & Putnam, 1986; Carlson & Putnam, 1993; Fischer & Elinitsky, 1990; Frischholz et al., 1990; Pitblado & Sanders, 1991) as well as findings of the present study, indicate it to be a valid and reliable screening tool of dissociative phenomena. Perhaps then, the DES is only appropriate for screening for general psychological complaints that may include dissociative concomitants (e.g. depersonalisation as found in depression or anxiety disorders) particularly when used with non-clinical populations. In any case, as Carlson and Putnam (1993) caution, the DES is only a screening tool and therefore, should not be used without an extensive diagnostic interview and good clinical judgement on the part of the practitioner.

The current findings also have major implications regarding the theoretical conceptualisation of dissociation as it currently stands. In concordance with arguments made by Frankel (1990, 1996) and others (e.g. Cardena, 1994; Ross, 1989; Sincoff, 1990; cited by Gershuny & Thayer) it appears that the concept of dissociation is currently too vague and broadly defined given that considerable overlaps have been found between the

scales commonly used to measure dissociative experiences and fantasy proneness (i.e. the DES and CEQ respectively). Moreover, conflicting results regarding the factorial structure of the DES (e.g. Carlson et al., 1991; Fischer & Elinisky, 1990; Ray et al., 1992; Waller et al., 1995) also suggests that there are problems with the current conceptualisation of dissociation.

Although the current study is indirectly related to research that has found that individuals with high levels of dissociative experiences, fantasy proneness, and absent-mindedness are more susceptible to pseudomemories of past events (e.g. Hyman & Billings, 1998; Johnson et al., 1995; Merckelbach et al., 2000a, 2000b), the current findings do offer some respite for advocates of the opposing position - that dissociative experiences are strongly linked to a past history of trauma and abuse. Although these individuals may exaggerate or confabulate memories of past trauma or abuse, the finding that these "so called" benign traits are, at least, moderately related to high levels of psychological disturbance or maladjustment suggests that some form of trauma or abuse still could have occurred in these individuals' pasts. Of course, future research that includes some form of objective method of reporting such events, as well as longitudinal studies that systematically map out the causal pathways of these related variables are ultimately necessary for any firm conclusions to be made in this regard.

5.3 Limitations of the present study

Although several promising findings were obtained, the current study is not without its limitations.

5.3.1. Size and characteristics of the sample

Although the overall number of participants was adequate for the fundamental analyses of the present study, the percentage of male participants (26%) was relatively low. Moreover, there were limited numbers of both Asian (14.6%) and Māori, or Māori/Pakeha (14.6%) participants. In addition, the age range of the participants was rather constrained given that the vast majority of the participants were undergraduate students (e.g. median age was 21).

Given that the age data was extremely positively skewed (>1), a non-parametric method of correlational analysis had to be utilised with regards to age. Thus, failure to find significant gender, age or cultural differences on each of the variables of interest may have, in some instances, been due to a lack of predictive power.

Additionally, this study was based on a sample of university students. Not only are university students not very representative of the general population, an overreliance on students, particularly psychology students for participation in psychological research can introduce bias. For instance, as Mulder et al (1998) suggests, students may self-select for particular courses based on their own life issues. Hence, the findings of the current study may be limiting in providing information to the general population and at best, are probably only generalisable to university students.

5.3.2. Methodological issues

Although a review of the psychometric properties of all the variables of interest revealed that they all demonstrated adequate validity and reliability, overlaps between the scales used to measure dissociative experiences (DES) and fantasy proneness (CEQ) suggest that there are issues with the factorial structures of one or both of these indexes, which in turn points to theoretical issues with the concepts themselves. For instance, perhaps as van der Kolk and Fisler (1995) claim, the DES only measures one particular facet of dissociation. However, given that these two scales are the most validated and thus, most commonly utilised measures of these two phenomena, (e.g. Bernstein & Putnam, 1986; Carlson & Putnam, 1993; Fischer & Elinitsky, 1990; Merckelbach et al., 2001) no alternative methods of measuring these variables were available for use.

In addition, although all three of the phenomena were directly related to poor mental health, unfortunately no self-report measure of traumatic background was administered to examine whether these inter-relationships were also related to past traumatic experiences. This would have been important in deciphering whether high levels of fantasy proneness and absent-mindedness are also commonly found in people with a past history of trauma rather than just being indicative of an increased vulnerability to minor psychopathology per se.

Moreover, although the GHQ-12 allowed for a general picture of one's mental health status, a self-report measure that included specific categories of psychopathology (e.g. depression, anxiety, schizophrenia, and somatisation) and/or an expert rating on dissociative pathology also would have conveyed a lot more information in this present study.

5.3.3. Self-report biases

Given that the current study was cross-sectional and relied solely on the self-report questionnaire method for collecting data, it was therefore susceptible to common method variance (Spector, 1981). In other words, it is possible that responses provided by the participants were subject to several response tendencies and biases such as; demand characteristics, social desirability, and situational and expectancy effects. For example, as Lynn & Rhue (1998) state, perhaps inconsistent results regarding the inter-relationships among these various phenomena are the result of situationally-induced expectancies and biases; whereby, in an effort for self-preservation, respondents endeavour to paint a consistent picture of themselves. In other words, the scales used to measure these phenomena may correlate significantly simply because they are administered in the same testing context. Furthermore, given findings in the literature (e.g. Merckelbach et al., 2000a; Merckelbach & Muris, 2001) that people prone to fantasy and dissociative experiences tend to over-endorse or exaggerate negative response items (i.e. positive response bias), it is possible that these individuals adopted a liberal approach when responding to items on the other self-report measures in the study. However, to some extent, this tendency to endorse negative items would have been controlled for with regards to the GHQ-12, given that while half the items on this scale are worded negatively, the other half are worded positively.

Although it is also possible that demand characteristics and/or social desirability influenced participants responses to the questionnaire, previous research (e.g. Elzinga et al., 2000; Merckelbach et al., 2001) has found that individual's with high levels of dissociative experiences and fantasy proneness are not susceptible to responding in a socially desirable fashion. In fact, as Elzinga et al (2001) discovered, it would have been more likely that the

individual's with low levels of dissociative experiences responded in a socially desirable fashion by under-reporting the extent of their experiences. It should also be noted, that in order to avoid potential biases in the current study, the researcher emphasised the need for all participants to respond in an honest and objective fashion. Moreover, although the general aim of the study was made clear to the participants, the specific hypotheses of the study were generally unidentifiable.

CHAPTER SIX: CONCLUSION

6.1 Conclusion

The aim of this chapter is to provide an overall summary of the conclusions drawn from the present study. Following on from this, suggestions and recommendations for future research will be specified.

The current study was successful in that it accomplished its main goal of examining the relationship among dissociative experiences, fantasy proneness, absent-mindedness, and general mental health. However, given that the present study had several limitations, specifically with regards to its lack of generalisability and its self-report nature, definite conclusions cannot be made. However, the results indicated that dissociative experiences, fantasy proneness, absent-mindedness and poor general mental health were all significantly inter-correlated. Thus, people with heightened dissociative experiences tend to be more fantasy prone and more absent-minded, fantasy prone individuals tend to be more absent-minded and vice versa, and high levels of all three of these phenomena tend to be predictive of high levels of poor general mental health.

Although both dissociative experiences and absent-mindedness were independent predictors of poor mental health, only absent-mindedness was significantly related to poor mental health when the influences of both dissociative experiences and fantasy proneness were taken into consideration. These results indicated that whilst absent-mindedness is to some degree, independently related to poor general mental health, there are major overlaps between the scales used to measure dissociative experiences and fantasy proneness, thus suggesting that there are methodological and theoretical limitations and issues with regards to how these two phenomena are currently conceptualised.

No significant cultural differences were found with regards to dissociative experiences and fantasy proneness. However, Asian individuals had lower levels of absent-mindedness than both NZ European/Pakeha and Māori individuals. Although no age differences were found

with regards to fantasy proneness, levels of dissociative experiences and absent-mindedness systematically decreased with increases in age. No significant gender differences were found on any of the variables of interest. Although promising, the findings of this study are for the most part, inconclusive. Hence, further research in this and related areas is essential for the continued unravelling of the complex inter-relationships between these three phenomena and their relative associations with psychopathology.

6.2 Recommendations for future research

As far as future research in this area is concerned, the replication of various results in the present study in a mixture of various clinical and non-clinical populations is recommended for generalising and extending the current findings. Moreover, there is a need for future research that examines the extent to which people with dissociative disorders and a vast range of other clinical disorders have high levels of fantasy proneness, absent-mindedness, and other personality characteristics to determine whether these individual differences are directly predictive of an increased vulnerability to psychopathology (whether to dissociative pathology per se or to various other psychopathologies). Additionally, future research that employs the use of larger sample sizes, particularly larger numbers of; male participants, older adults and, various cross-cultural groupings is recommended to further assess whether any age, gender or cultural differences exist in these three phenomena, as well as to clear up previous inconsistent research findings in this regard.

With regards to the possible theoretical and methodological implications that result from there being profound overlaps between dissociative experiences and fantasy proneness, it appears that the concepts themselves need to be extensively re-examined. For instance, perhaps further re-evaluation of the potential qualitative differences between the adaptive and maladaptive concomitants of each of these characteristics would be effective for drawing out the similarities between these two concepts. Moreover, as van der Kolk (1995) recommends, the interrelationships between the four separate but intimately interwoven phenomena of dissociation need to be assessed. In addition, given inconsistent and/or inconclusive findings with regards to the factorial structures of the scales used to measure

these two phenomena (i.e. DES and CEQ), the scales themselves probably need some modifying or conversely, alternative measures of dissociative experiences and fantasy proneness need to be explored. Although a pathological version of the DES (i.e. the DES-T) has been formulated, (e.g. Waller, Putnam, and Carson, 1996) validity and reliability data regarding its utility is currently lacking. Thus, further exploration of its utility as a screening tool of pathological dissociation is necessary.

Given that the GHQ-12 only provided a general picture of mental well-being in the present study, future studies with non-clinical samples may want to utilise screening instruments that provide distinct information about specific psychopathologies to examine the extent by which these personality correlates of dissociation contribute to the development and maintenance of various other mental illnesses.

Longitudinal studies need to be conducted in order to control for potential self-reporting biases (i.e. expectancy and situationally-induced effects, positive response bias) commonly found in individuals with high levels of these phenomena. Ultimately, prospective studies that include objective measures of childhood trauma and abuse, coupled with follow-up studies on traumatised children that systematically check for; alterations in memory over time, correlates of dissociation, and subsequent psychopathology are, without question, essential for mapping out the causal connections between all these interrelated variables.

Future research endeavours may also want to explore other factors and/or personality dispositions (e.g. family pathology, passive coping, parent-child attachment, cognitive control, negative emotionality) that are often found in conjunction with heightened levels of dissociative experiences, fantasy proneness, and absent-mindedness. For example, as Kihlstrom et al (1994) postulates, perhaps people high in fantasy proneness do not experience psychopathology without the existence of a personality characteristic or co-existing feature such as negative emotionality. In any case, studies that explore a range of potential mediating and moderating determinants are necessary to explicate what will, in all probability, turn out to be a complex relationship between trauma, dissociation and psychopathology.

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APPENDICES

Appendix A: Information Sheet

Appendix B: Questionnaire

Appendix C: Histograms and Box Plots indicating the distribution and skewness of each of the measures

Appendix D: Means and SD's of males and females on each of the variables of interest

Appendix E: Ethics Approval Form

APPENDIX A

PERSONALITY AND MENTAL HEALTH

Information Sheet

I would like to invite you to participate in this research project. This project is being undertaken to fulfil the requirements of a Masters Thesis for the Master of Arts in psychology.

Researcher:	Kellie Flaherty	Supervisor:	Dr Dave Clarke
Contact Details:	[redacted]	Contact Details:	414 0800 ext 9075 d.clarke@massey.ac.nz

This self-report questionnaire is designed to gather information on personality and mental well-being in New Zealand University Students. The aim of the study is to examine how various personality traits relate to each other and to mental health in general.

Completion and return of the questionnaire implies consent. You have the right to decline to answer any particular question.

- Please feel free to ask questions either before the questionnaire is distributed, during completion of the questionnaire or after it has been returned.
- Confidentiality and anonymity will be maintained by not gathering identifiable personal information.
- It is expected that the questionnaire can be completed within twenty to thirty minutes.
- Non-participation will NOT have any impact on class work.
- Only summary data will be used for thesis preparation, publication and review. Data will be stored under locked conditions within the Massey Albany Psychology Department and disposed of by the supervisor after the required 5-year period.
- Research findings will be posted on the Psychology Department Notice Board, Albany Campus. A summary sheet can also be obtained by printing your name and address on the envelope provided. This will be posted to you on completion of the project.
- Questionnaires and envelopes should be returned to the researcher when they have been completed.

Should the completion of this questionnaire cause you any discomfort, please contact the Massey University Albany Health and Counselling Centre for support and information on 443-9783. Please feel free to contact the researcher directly if you have any questions about this project.

THANK YOU SO MUCH FOR YOUR CONTRIBUTION TO THIS RESEARCH

APPENDIX B

SECTION A

Directions: This questionnaire consists of twenty-eight questions about experiences that you may have in your daily life. We are interested in how often you have these experiences. It is important, however, that your answers show how often these experiences happen to you when you **are not** under the influence of alcohol or drugs. To answer the questions, please determine to what degree, the experience described in the question applies to you and circle the number to show what percentage of the time you have the experience.

Example:

0% (never)	10	20	30	40	50	60	70	80	90	100% (always)

---

1. Some people have the experience of driving or riding in a car or bus or subway and suddenly realising that they don't remember what has happened during all or part of the trip. Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

2. Some people find that sometimes they are listening to someone talk and they suddenly realise that they did not hear part or all of what was said. Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

3. Some people have the experience of finding themselves in a place and having no idea how they got there. Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

4. Some people have the experience of finding themselves dressed in clothes that they don't remember putting on. Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

5. Some people have the experience of finding new things among their belongings that they do not remember buying. Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

6. Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before. Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person. Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

8. Some people are told that they sometimes do not recognise friends or family members. Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Circle a number to show what percentage of the time this happens to you.

   0% 10 20 30 40 50 60 70 80 90 100%

10. Some people have the experience of being accused of lying when they do not think that they have lied. Circle a number to show what percentage of the time this happens to you.

    0% 10 20 30 40 50 60 70 80 90 100%

11. Some people have the experience of looking in a mirror and not recognising themselves. Circle a number to show what percentage of the time this happens to you.

    0% 10 20 30 40 50 60 70 80 90 100%

12. Some people have the experience of feeling that other people, objects, and the world around them are not real. Circle a number to show what percentage of the time this happens to you.

    0% 10 20 30 40 50 60 70 80 90 100%

13. Some people have the experience of feeling that their body does not seem to belong to them. Circle a number to show what percentage of the time this happens to you.

    0% 10 20 30 40 50 60 70 80 90 100%

14. Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event. Circle a number to show what percentage of the time this happens to you.

    0% 10 20 30 40 50 60 70 80 90 100%

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them. Circle a number to show what percentage of the time this happens to you.

    0% 10 20 30 40 50 60 70 80 90 100%

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

18. Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

19. Some people find that they sometimes are able to ignore pain. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

20. Some people find that they sometimes sit staring into space, thinking of nothing, and are not aware of the passage of time. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

21. Some people sometimes find that when they are alone they talk out loud to themselves. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.). Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it). Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

25. Some people find evidence that they have done things that they do not remember doing. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

28. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear. Circle a number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

PLEASE CONTINUE ON TO <u>SECTION B</u>

SECTION B

Please answer each question by putting a *circle* around the 'YES' or 'NO' following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

1. As a child, I thought that the dolls, teddy bears and stuffed animals that I played with were living creatures. YES NO
2. As a child, I strongly believed in the existence of dwarfs, elves, and other fairy tale figures. YES NO
3. As a child, I had my own make believe friend or animal. YES NO
4. As a child, I could very easily identify with the main character of a story and/or movie. YES NO
5. As a child, I sometimes had the feeling that I was someone else (e.g. a princess, an orphan, etc.). YES NO
6. As a child, I was encouraged by adults (parents, grandparents, brothers, sisters) to fully indulge myself in fantasies and daydreams. YES NO
7. As a child, I often felt lonely. YES NO
8. As a child, I devoted my time to playing a musical instrument, dancing, acting, and/or drawing. YES NO
9. I spend more than half the day (daytime) fantasising or daydreaming. YES NO
10. Many of my friends and/or relatives do not know that I have such detailed fantasies. YES NO
11. Many of my fantasies have a realistic intensity. YES NO
12. Many of my fantasies are often just as lively as a good movie. YES NO
13. I often confuse fantasies with real memories. YES NO
14. I am never bored because I start fantasising when things get boring. YES NO
15. Sometimes I act as if I am somebody else and I completely identify myself with that role. YES NO
16. When I recall my childhood, I have very vivid and lively memories. YES NO
17. I can recall many occurrences before the age of three. YES NO
18. When I perceive violence on television, I get so into it that I get really upset. YES NO

19. When I think of something cold, I actually get cold. YES NO

20. When I imagine I have eaten rotten food, I really get nauseous. YES NO

21. I often have the feeling that I can predict things that are bound to happen in the future. YES NO

22. I often have the experience of thinking of someone and soon afterwards that particular person calls or shows up. YES NO

23. I sometimes feel that I have had an out of body experience. YES NO

24. When I sing or write something, I sometimes have the feeling that someone or something outside myself directs me. YES NO

25. During my life, I have had intense religious experiences which influenced me in a very strong manner. YES NO

PLEASE CONTINUE ON TO <u>SECTION C</u>

SECTION C

The following questions are about minor mistakes which everyone makes from time to time, but some of which happen more often than others. We want to know how often these things have happened to you *in the past 6 months.* Please *circle* the appropriate number.

4 = Very often 3 = Quite often 2 = Occasionally 1 = Very rarely 0 = Never

1. Do you read something and find you haven't been thinking about it and must read it again?	4	3	2	1	0
2. Do you find you forget why you went from one part of the house to the other?	4	3	2	1	0
3. Do you fail to notice signposts on the road?	4	3	2	1	0
4. Do you find you confuse right and left when giving directions?	4	3	2	1	0
5. Do you bump into people?	4	3	2	1	0
6. Do you find you forgot whether you've turned off a light or a fire or locked the door?	4	3	2	1	0
7. Do you fail to listen to people's names when you are meeting them?	4	3	2	1	0
8. Do you say something and realise afterwards that it may be taken as insulting?	4	3	2	1	0
9. Do you fail to hear people speaking to you when you are doing something else?	4	3	2	1	0
10. Do you lose your temper and regret it?	4	3	2	1	0
11. Do you leave important letters unanswered for days?	4	3	2	1	0
12. Do you find you forget which way to turn on a road you know well but rarely use?	4	3	2	1	0
13. Do you fail to see what you want in a supermarket (although it's there)?	4	3	2	1	0
14. Do you find yourself wondering whether you've used a word correctly?	4	3	2	1	0
15. Do you have trouble making up your mind?	4	3	2	1	0
16. Do you find you forget appointments?	4	3	2	1	0

4 = Very often	3 = Quite often	2 = Occasionally	1 = Very rarely	0 = Never

17. Do you forget where you put something like a newspaper or a book?	4	3	2	1	0
18. Do you find you accidentally throw away the thing you want and keep what you meant to throw away – as in the example of throwing away the matchbox and putting the used match in your pocket?	4	3	2	1	0
19. Do you daydream when you ought to be listening to something?	4	3	2	1	0
20. Do you find you forget people's names?	4	3	2	1	0
21. Do you start doing one thing at home and get distracted into doing something else (unintentionally)?	4	3	2	1	0
22. Do you find you can't quite remember something although it's "on the tip of your tongue"?	4	3	2	1	0
23. Do you find you forget what you came to the shops to buy?	4	3	2	1	0
24. Do you drop things?	4	3	2	1	0
25. Do you find you can't think of anything to say?	4	3	2	1	0

PLEASE CONTINUE ON TO <u>SECTION D</u>

SECTION D

We would like to know if you had any medical complaints, and how your health has been in general, *over the past few weeks*. Please answer all questions simply by *circling* the answer, which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those you had in the past. Please try to answer all the questions.

1. **Been able to concentrate on whatever you're doing?**	Better than usual	Same as usual	Less than usual	Much less than usual
2. **Lost much sleep over worry?**	Not at all	No more than usual	Rather more than usual	Much more than usual
3. **Felt that you are playing a useful part in things?**	More so than usual	About the same as usual	Less so than usual	Much less than usual
4. **Felt capable of making decisions about things?**	More so than usual	About the same as usual	Less so than usual	Much less than usual
5. **Felt constantly under strain?**	Not at all	No more than usual	Rather more than usual	Much more than usual
6. **Felt you couldn't overcome your difficulties?**	Not at all	No more than usual	Rather more than usual	Much more than usual
7. **Been able to enjoy your normal day to day activities?**	More so than usual	About the same as usual	Less so than usual	Much less than usual
8. **Been able to face up to your problems?**	More so than usual	About the same as usual	Less so than usual	Much less than usual
9. **Been feeling unhappy and depressed?**	Not at all	No more than usual	Rather more than usual	Much more than usual
10. **Been losing confidence in yourself?**	Not at all	No more than usual	Rather more than usual	Much more than usual
11. **Been thinking of yourself as a worthless person?**	Not at all	No more than usual	Rather more than usual	Much more than usual
12. **Been feeling reasonably happy, all things considered?**	More so than usual	About the same as usual	Less so than usual	Much less than usual

PLEASE CONTINUE ON TO SECTION E

SECTION E

I would like to ask you some general information about your background. Please fill in or tick the box next to the appropriate answer.

1. What is your age, in years? _____ years.

2. What is your gender?

   Female ☐

   Male ☐

3. Which ethnic group or group(s) do you identify with?

   Maori ☐

   European/ Pakeha ☐

   Pacific Island ☐ Specify _____

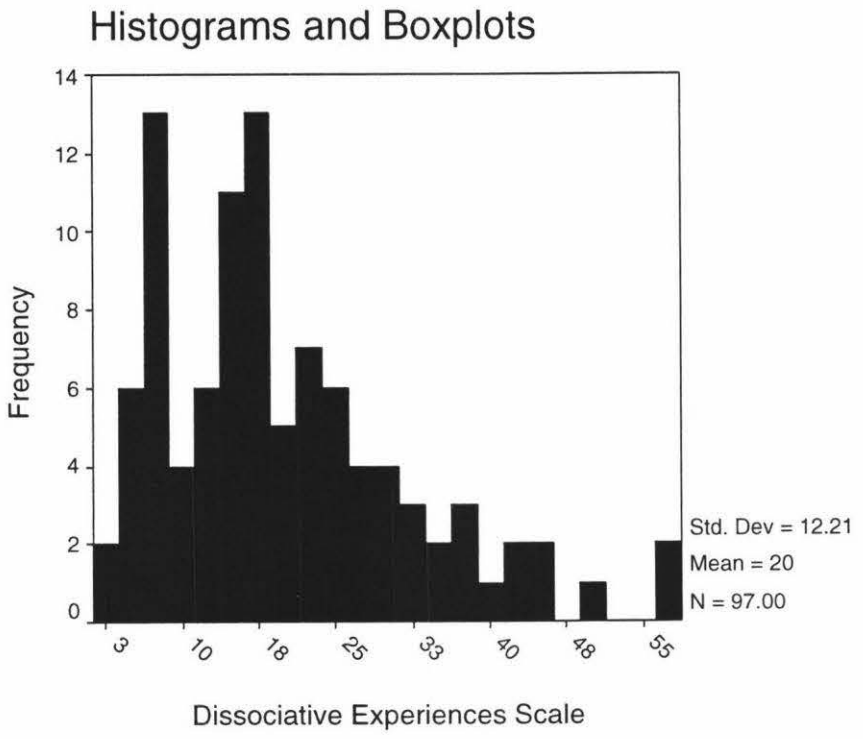
   Asian ☐ Specify _____

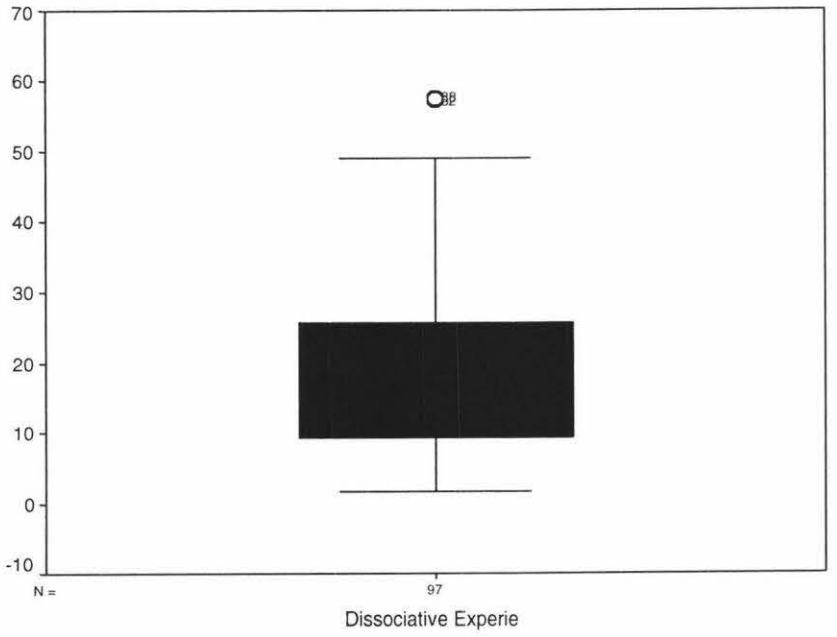
   Other – Please specify _____

PLEASE CHECK THAT YOU HAVE NOT MISSED ANY QUESTIONS

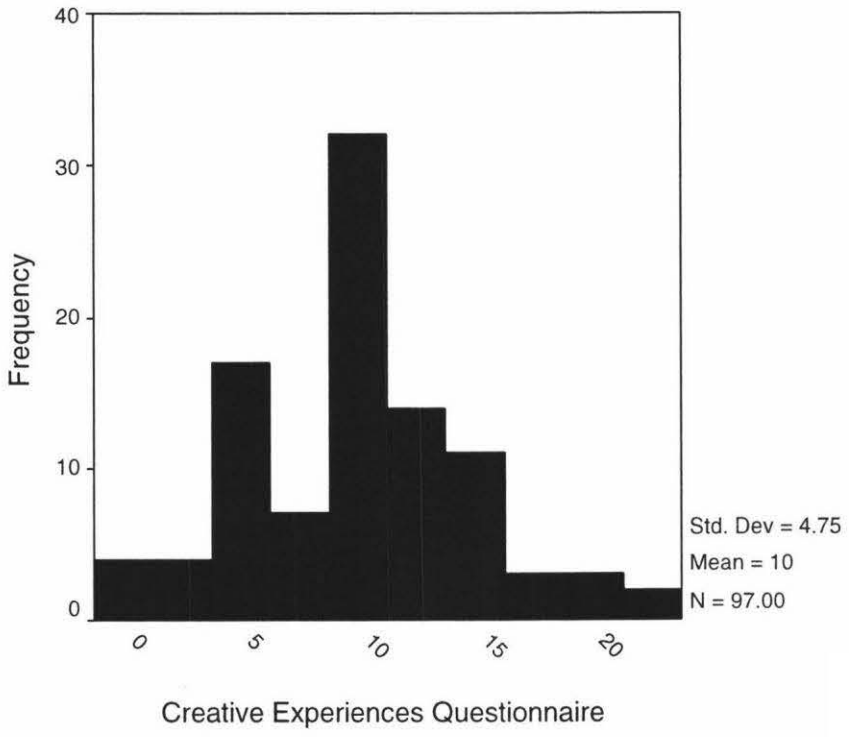
THANK YOU SO MUCH FOR PARTICIPATING IN THIS RESEARCH

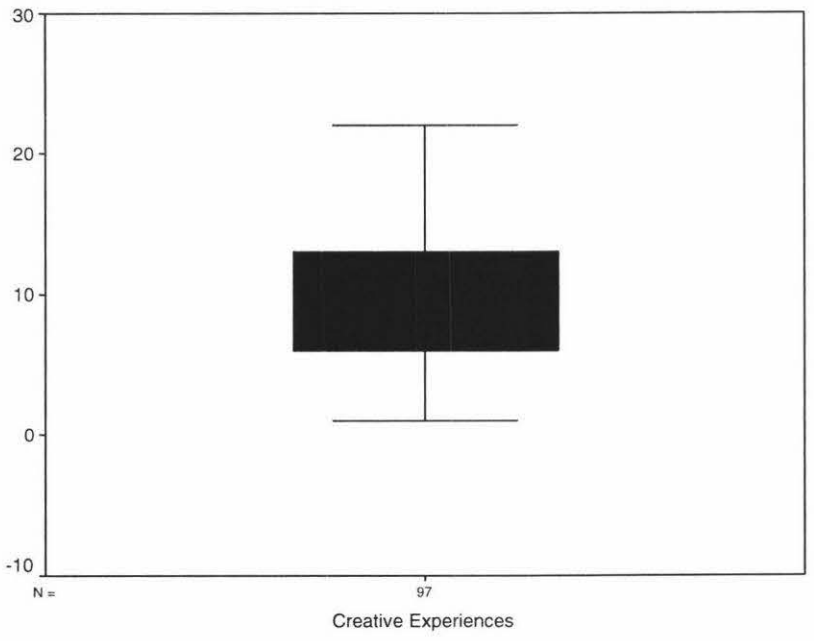
APPENDIX C


Histograms and Boxplots
Frequency
14
12
10
8
6
4
2
0
3
10
18
25
33
40
48
55
Std. Dev = 12.21
Mean = 20
N = 97.00
Dissociative Experiences Scale

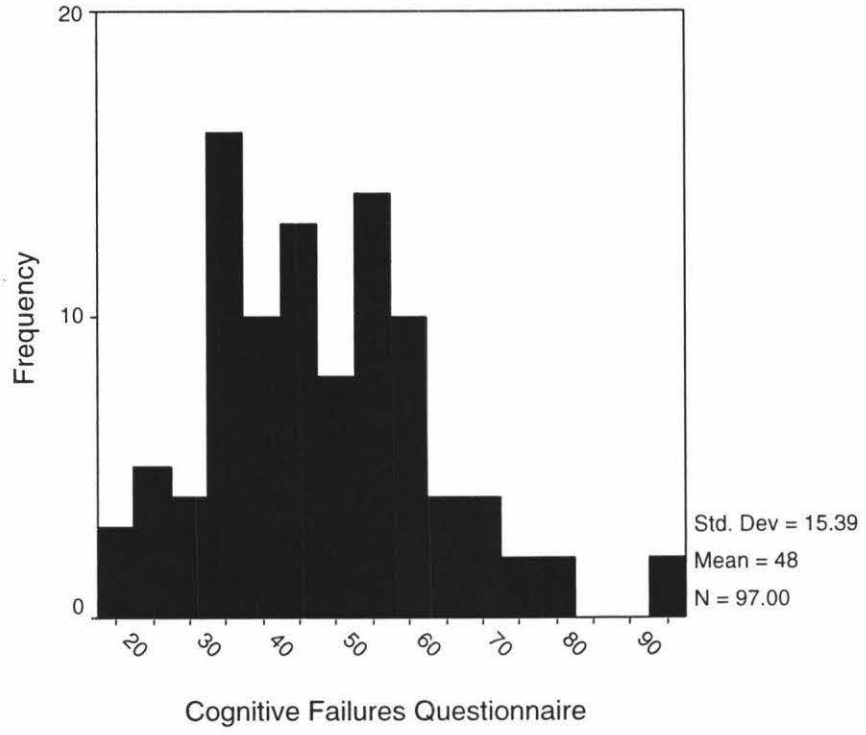

70
60
50
40
30
20
10
0
-10
N =
97
Dissociative Experie

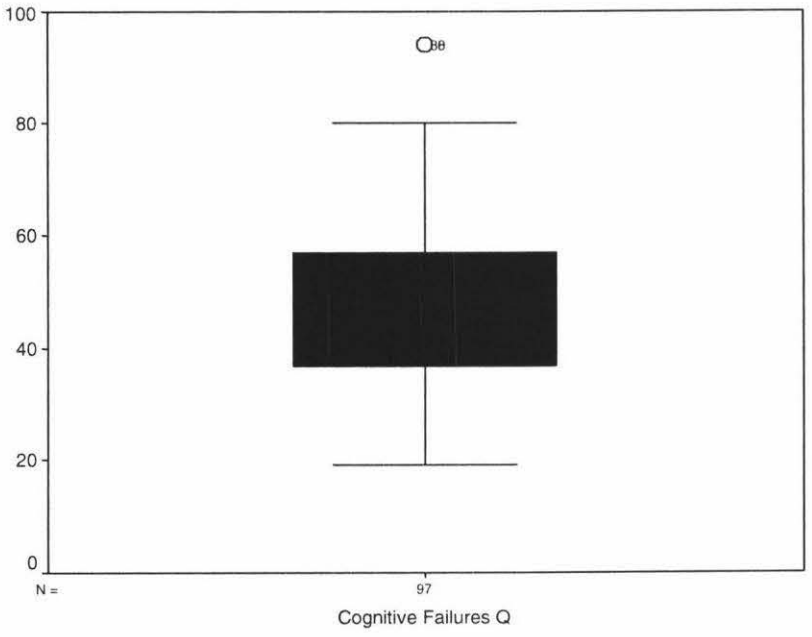
APPENDIX C


40
30
20
10
0
Frequency
0
5
10
15
20
Std. Dev = 4.75
Mean = 10
N = 97.00
Creative Experiences Questionnaire

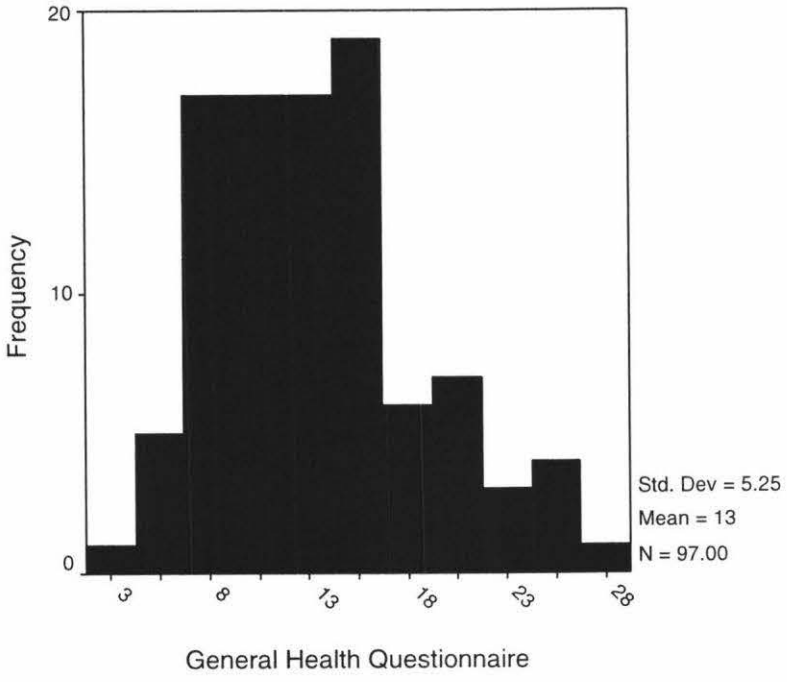

30
20
10
0
-10
N =
97
Creative Experiences

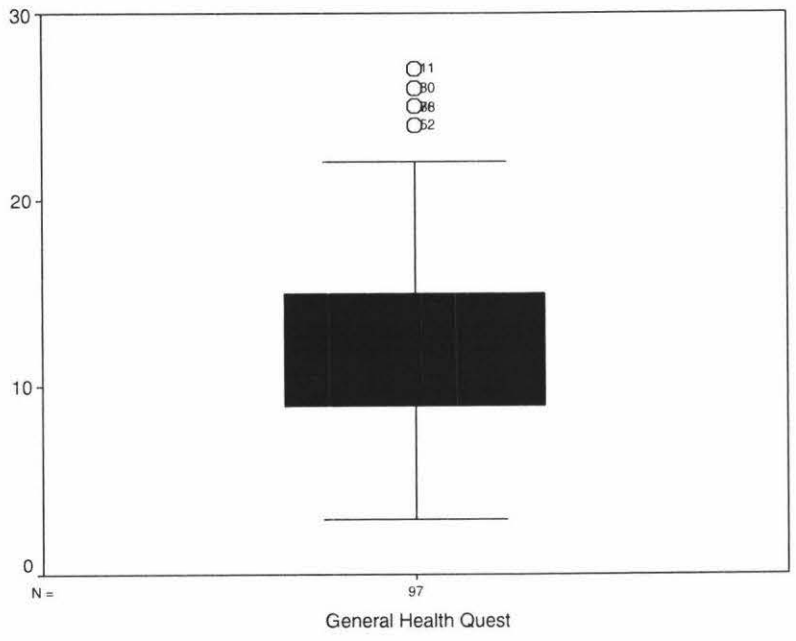
APPENDIX C


20
10
0
Frequency
Std. Dev = 15.39
Mean = 48
N = 97.00
20
30
40
50
60
70
80
90
Cognitive Failures Questionnaire


100
80
60
40
20
0
N =
97
Cognitive Failures Q

APPENDIX C


20
10
0
Frequency
3
8
13
18
23
28
Std. Dev = 5.25
Mean = 13
N = 97.00
General Health Questionnaire


30
20
10
0
N =
97
General Health Quest

Appendix D: Means and SD's of males and females on general mental health (GHQ), dissociation (DES), absent-mindedness (CFQ), fantasy proneness (CEQ), and age.

	Males n =25		Females n =71	
Variable	M	SD	M	SD
GHQ	3.54	.75	3.52	.72
DES	4.38	1.29	4.22	1.39
CFQ	46.08	17.49	48.21	13.65
CEQ	9.04	4.99	10.39	4.68
AGE	24.60	7.85	25.82	10.20

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26 March 2004

Kellie Flaherty
C/- Dr Dave Clarke
School of Psychology
Massey University
Albany

Dear Kellie

HUMAN ETHICS APPROVAL APPLICATION – MUAHEC 04/016
"Dissociation, Fantasy Proneness, Absentmindedness and General Mental Health"

Thank you for your application. It has been fully considered, and approved by the Massey University, Albany Campus, Human Ethics Committee.

If you make any significant departure from the Application as approved then you should return this project to the Human Ethics Committee, Albany Campus, for further consideration and approval.

Approval is for three years. If this project has not been completed within three years from the date of this letter, a new application must be submitted at that time.

Yours sincerely

Associate-Professor Kerry Chamberlain
Chairperson,
Human Ethics Committee
Albany Campus

cc: Dr Dave Clarke
School of Psychology