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ABSTRACT

FACULTY OF SOCIAL SCIENCES, PSYCHOLOGY

Master of Philosophy

CHILDHOOD TRAUMA AND PSYCHOLOGICAL DISTRESS: THE MEDIATING ROLE OF DISSOCIATION

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Much research has focussed on the relationship of dissociation with both childhood trauma and psychological symptomatology. A focus on bivariate links between these variables has not lead to an adequate understanding of psychological processes in trauma related-symptomatology. An absence of explanatory theoretical models of dissociation has also prevented the development of a clinically useful understanding of dissociation. This study focuses on the role of dissociation as a mediator in the relationship between childhood trauma and psychological symptomatology, drawing on an explanatory cognitive-behavioural conceptualisation of dissociation.

A clinical sample consisting of participants attending clinical psychology services (n = 40) and a non-clinical student sample (n = 49) participated. They completed standardised measures of childhood trauma, dissociation and psychological symptomatology. A new, theoretically grounded measure of dissociation (the Wessex Dissociation Scale) was also used.

Results showed the hypothesised mediating effects of dissociation in a number of axis I and II disorders. Therefore, dissociation can be seen as a mediating mechanism in the translation of childhood trauma into psychological symptomatology. Support was also shown for the cognitive-behavioural conceptualisation of dissociation. The three hypothesised forms of dissociation were differentially related to both trauma and symptomatology.

The results were interpreted within the cognitive-behavioural framework, and offer substantial clinical utility in identifying dissociation and targeting therapy. The limitations of the study are also discussed and future research will need to continue to develop causal models which are based on a better understanding of the psychological process of dissociation.

Table of Contents

List of Tables and Figures

Declaration

I hereby declare that the work referred to in this thesis is the result of work done wholly while in registered postgraduate candidature. No portion of this work has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Chapter 1

INTRODUCTION

1.0 INTRODUCTION

1.1 BRIEF OVERVIEW

The present study considers a mediational model of the relationship between trauma, dissociation and psychopathology. It will consider the definitional issues in the study of dissociation and the historical context of this concept. Limitations of the childhood trauma literature and the implications of these for the understanding of dissociation will be considered. The identification of dissociation and aetiological models will also be discussed. The development of the proposed mediational model from existing evidence will be presented, and investigated within an explanatory theoretical framework.

1.2 DEFINING DISSOCIATION

The present study focuses on the concept of dissociation. The definition offered in DSM IV (American Psychiatric Association, 1994) identifies its central feature as "disruption in the usually integrated functions of consciousness, memory, identity, or the perception of the environment" (p.477). This description recognizes the broad range of mental processes that may be affected by dissociation. However, alternative definitions stress the significance of the nature of disruption. Spiegel & Cardeña (1991) define dissociation as the structured separation of mental processes, distinguishing it from other psychological phenomena which also impact on mental life. Most definitions of dissociation, Putnam (1996) concluded, identify two essential features. First, information is available to the individual, but not able to be accessed at all times. Secondly, relevant pieces of information are not associated with each other "in the way one would expect" (p.286). These definitions suggest that dissociation affects a broad range of mental processes. However, they also emphasise that our understanding of dissociation is based on our concept of normal patterns of association and mental processing. Dissociation refers to a deviation from this expected structure.

The disruption resulting from the dissociation of mental processes is manifested in experiences of depersonalisation (feelings of detachment or estrangement from one's self), derealisation (feelings of detachment from the external environment), amnesia (inability to recall important information, too

extensive to be explained by normal forgetting) and absorption (preoccupation with an activity, excluding other events from awareness) (Carlson & Putnam 1993). Absorption, however, has not been universally identified as central to dissociation. Further analysis has suggested that it may be a normally distributed general factor, rather than specific to dissociative experiences (Vanderlinden, van Dyck, Vandereycken, Vertommen & Verkes, 1993; Waller, Putnam & Carlson, 1996). Identity confusion and identity alteration have also been described as important clinical manifestations of dissociation. Along with depersonalisation, derealisation and amnesia, these have been identified by Steinberg (1995) as the core symptoms. Therefore, current evidence would suggest the cardinal experiences of dissociation to be depersonalisation, derealisation, identity confusion and amnesia.

As Putnam (1996) suggests, the decoupling of mental processes manifested in these symptoms may leave information available to the individual, though it is not accessible at all times. The potential influence of dissociated cognitions or behaviours on non-dissociated elements of the individual has implications for the study and treatment of dissociation. Early conceptualisations saw dissociated mental processes as entirely independent of one and other. However, experimental evidence suggested that dissociated information could produce priming and interfering effects on ongoing behaviour (Kihlstrom 1984, 1987). Spiegel & Cardeña (1991) saw the effect of material outside conscious awareness as one of the most interesting aspects of dissociation and it is, indeed, important in our understanding of the clinical characteristics of dissociation. The interference of dissociated information on an individual's everyday functioning is often a key factor in experienced symptomatology and in the decision to seek help.

In considering a definition, issues of exclusion and the normal versus pathological nature of dissociative phenomena also warrant brief consideration. Dissociative symptoms seen in clinical samples have been interpreted by many authors as the pathological extreme of a continuum of dissociative experiences. Kennerley (1996) suggests that some degree of dissociation is beneficial, as it enables us to develop automatic behaviours (such as driving a car) without

awareness of all the required actions. However, this inclusion of automatic behaviours as examples of 'normal' dissociative experiences is disputed. Spiegel & Cardeña (1991) argue that overlearned and unreflective behaviour does not represent truly dissociative experience. An unbridgeable compartmentalisation of dissociated experience is considered to be discrete from automatic behaviours, which can be reflected on in consciousness if an individual is willing to do so. Given Putnam's (1996) conclusions that most definitions of dissociation involve the inaccessibility of information, it would seem reasonable to exclude overlearned behaviour from the investigation of dissociative phenomena. Though there is usually no need to reflect on our automatic behaviours (e.g., when driving a car), we are able to do so if we should wish. In addition to this reservation, the strong links that have been established between the experience of trauma and dissociation (see 1.8.2.2) have not been parallelled in the automatic behaviours literature, as would be expected if they constituted part of the dissociative experiences spectrum.

Therefore, it would seem that automatic (or overlearned) behaviour is not best understood within the field of dissociation. However, the ability to dissociate may, as Kennerley (1996) suggests, be beneficial and a part of normal psychological functioning. The development of measures of dissociation (e.g., Dissociative Experiences Scale-DES, Bernstein & Putnam, 1986; The Dissociation Questionnaire-DIS-Q, Vanderlinden, van Dyck, Vandereycken, Vertommen & Verkes, 1993; Questionnaire of Experiences of Dissociation-QED, Riley, 1988) has enabled us to investigate experiences of the core symptoms. When administered to non-clinical populations, scores have been found to be lower than in clinical samples. However, these non-clinical populations do not score zero (e.g., Carlson & Putnam, 1993). This would suggest the widespread presence of dissociative experiences, ranging from normal to pathological levels. The inclusion of automatic behaviours is not essential to a dimensional conceptualisation of dissociative experiences.

In the present study, dissociation will refer to the structured separation of mental processes such as memory, identity and perception, which one would expect to be associated. This will not include automatic behaviours. However,

dissociation is considered to be a dimensional phenomenon, ranging from normal to pathological experiences.

1.3 HISTORICAL PERSPECTIVE

Interest in the concept of dissociation was sparked over a century ago by Pierre Janet. In his 1889 book, l'Automatism Psychologique, Janet discussed his clinical observations, and led the way in the systematic study of dissociation. He considered this to be the psychological process by which traumatic experience was transformed into psychopathology. Frightening or novel experiences (accompanied by 'vehement emotions' that did not fit into existing 'schemes') were split off from normal experience. Janet proposed that the cognitions, affect and other elements related to the experience were organised separately as 'idées fixes', and were kept from consciousness and voluntary control. The dissociative symptoms he observed in his case studies were, he believed, the result of the emergence of fragments of the unintegrated experience as pathological 'automatisms' (Havens, 1966; van der Kolk & van der Hart, 1989).

The initial interest shown in Janet's work was short-lived, due in part to its close association with the field of hypnosis. As hypnosis fell into disrepute at the end of the 19th century, so did Janet's work on dissociation (van der Hart & Friedman, 1989). This once popular psychological theory, which had started a move in psychiatry from the concept of disease to that of process (Havens, 1966), became less influential. Advances in the natural sciences also led to the study of psychological phenomena (such as consciousness) becoming less popular as contemporary interest focussed on organic processes (van der Kolk & van der Hart, 1989).

Possibly a greater influence on the declining interest in Janet's work was the growing appeal of the work of Freud. At the end of the 19th century, Freud was also interested in the roots of psychopathology in traumatic experience (van der Hart & Brown, 1992). However, Freud soon abandoned his belief that the aetiology of hysteria lay in sexual abuse in childhood (Freud, 1896), in favour of the concept of repressed wishes and instincts. This more familiar Freudian thinking was socially acceptable to his peers and clientele, and gained in

popularity (Masson, 1984). The 'principle of constancy' meant that the central role of childhood trauma was replaced by a role for excitation that has failed to find adequate discharge (van der Hart & Brown, 1992).

Social pressures may have strongly influenced the work of theorists such as Freud, who had previously acknowledged the existence of childhood sexual abuse. Recently these pressures have altered but have not disappeared. A somewhat similar debate has reemerged at the end of the 20th century. Doubt has been cast on the reliability of memories of childhood sexual abuse recovered in therapeutic settings (Brewin, 1996). The recovered memory / false memory debate has resulted in legal action, academic discussion and the foundation of false memory societies both in the US and Britain.

Evidence from prevalence studies carried out in the mid 1970's (and the growing societal recognition of the existence and prevalence of sexual abuse) have lead to a refocusing of present social pressures faced by researchers and clinicians in the field. The debate has shifted from a denial of the existence of sexual abuse a century ago to a somewhat similar debate on the area of therapeutic techniques and memory processes involved in recovered / false memories of abuse. Rather than asking if those reporting abuse should be believed (though this is still asked, especially in the case of males reporting abuse - Holmes, Offen & Waller, 1997), questions now focus on whether reports of abuse that has been 'forgotten' and subsequently 'remembered' should be believed. This echo of a century-old approach to abuse victims suggests that the proposed process of social construction in defining sexual abuse as a legitimate social problem may still be underway. However, progress has been made.

Along with the recognition of the prevalence of abuse, the increased research activity has brought the possible mental health sequelae of abuse to the attention of those working in the field (Trickett & Putnam, 1993). The growing literature has implications for both the aetiology and treatment of psychiatric and psychological disorders associated with abuse (Kuyken, 1995). Numerous studies have now contributed to a knowledge base on trauma-related disorders (e.g., Briere & Zaidi, 1989; Browne & Finkelhor, 1986; Jumper, 1995; Mullen, Martin, Anderson, Romans & Herbison, 1993; Rosen & Martin, 1996). As a result of

efforts to identify an explanatory construct for the growing evidence linking trauma (specifically childhood sexual abuse) and psychopathology, Janet's work on dissociation has been revisited and expanded (van der Hart & Friedman, 1989; van der Kolk & van der Hart, 1989). Thus, the significance of dissociation in trauma related disorders has been recognised (e.g., Carlson & Putnam, 1993; Demitrack, Putnam, Brewerton, Brandt & Gold, 1990; Ross, 1991). However, its specific role has remained unclear. This is partly as a result of the methodology which has been used to investigate the relevant variables of trauma, dissociation and psychological disorders, and of the methodological limitations present in the investigation of childhood trauma.

1.4 LIMITATIONS OF CHILDHOOD TRAUMA RESEARCH: IMPLICATIONS FOR UNDERSTANDING DISSOCIATION

From the mid-1970's, the issue of childhood abuse has been brought increasingly into the public arena. Cases of sexual abuse referred to child protection services in the US increased from 6,000 in 1976 to 500,000 in 1992 (Mendel, 1995). Trickett & Putnam (1993) also reported a National Center of Child Abuse and Neglect study, demonstrating a 300% increase in recognised cases of sexual abuse between 1980 and 1988. With this increased recognition came an increase in research directed at investigating childhood abuse.

Early prevalence studies of childhood sexual abuse reported rates of between six and 62 percent for females, and between three and 31 percent for males (Finkelhor, 1986). These reports illustrate the wide variance in prevalence estimates, which continues to be problematic. However, such methodological difficulties have been acknowledged and addressed in the literature. A number of those limitations will be outlined in this section, to explain some of the limitations on our ability to interpret the role of dissociation in those cases.

Differences between studies in their basic definitions of childhood sexual abuse has resulted in difficulty in comparing and contrasting findings (Browne & Finkelhor, 1986). One broad definition is that such experiences must involve physical contact. However, other studies involve the inclusion of differing degrees of non-contact and/or consensual sexual experiences (Jumper, 1995). Many

definitions also state the age before which these experiences are considered childhood abuse. However, these are often not comparable. For example, Briere & Zaidi (1989) used an age criteria of before the age of 17 years, whereas Bagley, Rodberg, Wellings, Moosa-Mitha & Young (1995) used a definition stating that the experiences had occurred before the age of six years. Yet another approach to this has been taken (e.g., Browne & Finkelhor, 1986) stating that the age difference between child and abuser must be more that 5 years. With such diversity in definition of childhood sexual abuse, it has been difficult to draw conclusions from the literature.

Further difficulties such as diverse sample sources, and a focus on female participants have also contributed to the difficulty in making sense of the available data. Awareness of these methodological difficulties, and detailed analysis can go some way to resolving these difficulties. For example, Gorey & Leslie (1997) found that despite an increase in reported cases of sexual abuse, by adjusting for diverse study response rates and operational definitions it can be concluded that there has not been a rise in actual rates of childhood sexual abuse.

There is a further methodological difficulty which is less amenable to solution by such analysis, that is the retrospective nature of most available data on childhood abuse. There are the unusual studies that seek independent corroboration of reports of childhood abuse by the use of other means such as child welfare case notes (Bagley et al., 1995). However, the majority of studies are based on retrospective self-report in adult samples, which may not be accurate (Briere & Runtz, 1988b). This potential inaccuracy has been highlighted in recent years by the debate surrounding false memory/recovered memory (Brewin, 1996). This has lead to investigations of memory of abuse experiences though it is still unclear what factors determine whether abuse is remembered or forgotten. However, to gather data on only those survivors for whom corroborating evidence can be obtained presents not only practical difficulties, but may ignore a great number of those who have experienced childhood abuse but did not disclose at the time or who were not taken seriously. Indeed Roesler (1994) found that for those who disclosed in childhood, the reaction they received had a mediating effect between childhood abuse and adult symptomatology. They also

had a significantly worse reaction than those who waited until adulthood to disclose. As this study also used retrospective self-report methodology, we must view the results with caution. However, potential mediating factors are important issues to consider in research into childhood abuse, and many of them cannot be addressed without the use of retrospective self-report.

There is no simple solution to the difficulties in the use of retrospective reports. In the present study, retrospective self-report will be used, with the acknowledgment that this addresses the client's report of their present subjective perception of the degree of trauma experienced in childhood (Sanders & Becker-Lausen, 1995).

The present study will use a broad definition of sexual abuse which will include contact, non-contact and consensual dimensions identified by Jumper (1995). A broad interpretation of childhood trauma will also be applied, which encompasses trauma other than sexual abuse, this would include physical and emotional abuse. This approach is in keeping with evidence which suggests that different forms of childhood abuse rarely occur in isolation (e.g., Briere & Runtz, 1988). It has also been observed that dissociative experiences are best predicted when considering multiple forms of abuse (Sandberg & Lynn, 1992; Chu & Dill, 1990; Sanders, McRoberts & Tollefston, 1989; Sanders & Becker-Lausen, 1995). Therefore, as dissociation is the main focus of this study, multiple forms of abuse will be considered (within the methodological constraints of the existing literature).

1.5 IDENTIFICATION OF DISSOCIATION

1.5.1 Dissociative Types Or Dissociative Traits

Theories of pathological dissociation have their foundations in two approaches, the typologic and the continuum models. The typologic model, traditionally associated with Janet's approach to dissociation, hypothesises that there is a dissociative 'type' of individual. In this model, dissociation involves a particular psychological organisation, with characteristics not typical in 'normal' individuals. In contrast, continuum models consider pathological dissociation to be an extreme of normal dissociation, not qualitatively different. This poses some problems. The continuum model forms the basis of many of the available

measures of dissociation (e.g., Dissociative Experiences Scale (DES); Bernstein & Putnam, 1986; Carlson & Putnam, 1993; and the Dissociation Questionnaire (DIS-Q); Vanderlinden, van Dyck, Vandereycken & Vertommen, 1991 - see 1.3.2). It is with these tools that much of the research in the area has been carried out. However, the diagnosis of dissociative disorders (as outlined in the DSM classification system; DSM IV, American Psychiatric Association, 1994) relies on a typologic model. Diagnostic tools, designed to assess if an individual displays the pathological dissociative characteristics, include the Dissociative Disorders Interview Schedule (DDIS, Ross, Heber, Norton, Anderson, Anderson & Barchet, 1989) and the Structured Clinical Interview For DSM IV- Dissociative Disorders (SCID-D, Steinberg, 1994). Therefore, it would seem there is a need to harmonise the conceptualisation of dissociation in clinical practice and research.

An attempt has been made by Waller, Putnam & Carlson (1996) to clarify the nature of dissociation. They carried out a taxometric analysis of scores on the DES (a tool designed to measure the continuum of dissociative experiences). Taxometric analysis is a recently devised statistical method, which yields different patterns of data for typologic and continuum variables. Though "most theoretical and empirical work on psychological dissociation has either implicitly, or explicitly endorsed the notion of a dissociative continuum" (Waller et al. 1996, p.302), strong support was found for a typological model. A separate taxon of pathological dissociation has also been observed in a longitudinal study (Ogawa, Sroufe, Weinfield, Carlson & Egland 1997). Waller et al. (1996) argued that evidence suggesting a trait model derives primarily from studies of non-pathological dissociation (e.g., normal population studies). If dissociation is indeed typologic in nature, existing scales may be measuring two discrete variables - pathological dissociation and normal dissociation. This evidence suggests implications, not only for our theoretical conceptualisation of dissociation, but also for the way in which it is measured.

1.5.2 Available Assessment Tools

As the concept of dissociation has been revisited in recent years, assessment instruments have been developed for clinical and research purposes.

Some have been widely accepted and validated, whilst others have not become popular. Currently, the Dissociative Experiences Scale (DES, Bernstein & Putnam, 1986; Carlson & Putnam, 1993), a self-report measure of dissociative experiences, is the most widely clinically used and researched measurement tool for assessing dissociative symptomatology. The DES measures reported frequency of a list of diverse dissociative experiences. Higher endorsement of reported dissociative experiences on this scale is thought to indicate increasingly pathological experience. The authors stated that a score of over 30 was associated with the likelihood of Multiple Personality Disorder (MPD - which has recently been renamed Dissociative Identity Disorder, DID). However, of individuals scoring above the cut-off level of 30, only 17% have MPD (Carlson, Putnam, Ross, Torem, Coons, Dill, Lowenstein & Braun, 1993). Other cut off scores have also been used, again, with little evidence as to their validity. Sandberg & Lynn (1992) took the upper 15% of DES scores as indicating high levels of dissociation. However, they found that eight of the subjects scoring in the upper 2% did not meet criteria for a dissociative disorder, suggesting a high level of false positives (for a discussion on false positives, see Carlson et al., 1993) . On further investigation of the data, only six percent of those scoring over 20 met the criteria for a dissociative disorder. It seems the DES is able to identify those who 'may' have MPD (99% of those scoring under 30 do not have MPD, Carlson et al., 1993) and indeed, it is intended to be used as a screening tool (not a diagnostic tool) for dissociative disorders (Carlson & Putnam, 1993; Carlson et al., 1993). However, this does not present strong evidence for the validity of the DES as a measure of pathological dissociation. As Waller et al. (1996) suggest, the DES may measure both pathological and normal dissociation. Unfortunately, we have no way of distinguishing a high DES score (e.g., above 30) which indicates the presence of MPD (only 17% of scores over 30) and a similar score which does not represent MPD.

An alternative measure, the Dissociation Questionnaire (DIS-Q, Vanderlinden, van Dyck, Vandereycken & Vertommen, 1991), has also been widely used. The cut off of 2.5 suggested for this scale (Vanderlinden et al., 1991) was reported as having very high sensitivity and specificity in identifying 'serious'

dissociative experiences. However, a definition of 'serious' dissociative experience is not given. The fact that cut-off scores cannot be relied upon to differentiate normal from pathological experiences of dissociation has been recognised by researchers in the area (e.g., Carlson & Putnam, 1993; Carlson et al., 1993; Ross, Joshi & Currie, 1990). However, they are still used. In light of the more recent evidence presented by Waller et al., (1996), suggesting the DES is measuring two separate types of dissociation - normal and pathological, a cut-off score for the scale does not appear to be appropriate. If DES items are measuring both pathological and non-pathological dissociation, the final score obtained by an individual can tell us little about the nature of their experience - pathological or normal. Waller et al. (1996) have gone some way to applying these findings to the DES. They have developed a dissociative taxon measure, indicating pathological dissociation, which consists of a subset of eight questions from the DES (the DES-T). However, though these items are suggested to be the most predictive of pathological dissociation, the remaining items are not necessarily indicators of non-pathological experience. There is no theoretical base underlying the selection of these items, though they do appear to address the more extreme severe dissociative symptoms associated with MPD (van Ijzendoorn & Schuengel, 1996) The predictive validity of the DES-T in identifying individuals with Multiple Personality Disorder (MPD) and dissociative disorders is high. Waller et al. (1996) report an average score of zero for the majority of these items in a range of normal and non-clinical comparison populations. However, elevated scores were reported for Post Traumatic Stress Disorder and dissociative disorders groups.

The DES-T may be a useful development for identifying those with extreme dissociative symptoms. However, in singling out severe dissociative pathology, the scale is not able to identify pathological dissociation of a less extreme nature. A measure is needed to identify dissociation in cases where it is a significant symptom but not necessarily in a severe form.

The measures described above have their advantages and disadvantages. They also cover a wide range of experiences, all considered to be dissociative. Kennedy & Waller (under consideration) have suggested that, given the diversity of dissociative symptoms (ranging from nightmares to multiple/alter personalities),

it is unlikely that dissociation can be understood as a unitary construct. Individuals with vastly different symptom profiles can have the same overall score on existing measures, which can be considered to be essentially symptom checklists. The final measure score is the average of the reported frequency of dissociative experiences listed. However, the experiences are not comparable in significance or relevance to pathological dissociation. In order to estimate the significance of the many different dissociative experiences, it is first necessary to have a coherent theoretical understanding of dissociation. The weakness of these measures may lie in the fact that they lack a foundation in a psychological theory of dissociation. Kennedy & Waller have developed a conceptual basis for addressing these issues (see 1.7.3). The resulting measure, the Wessex Dissociation Scale (WDS), will be used in the present study, along with the DES. Within a cognitive-behavioural framework, three levels of dissociation are proposed. Rather than counting symptoms, the WDS asks about behavioural manifestations of hypothesised underlying mechanisms. In place of reliance on a cut-off score, the WDS assesses the information processing level at which dissociation has occurred. Rather than a check list of a wide range of dissociative symptoms, this tool aims to measure an underlying dissociative process via behavioural manifestations/symptomatology.

1.5.3 Diagnosis of Dissociative Disorders

Dissociation has been included in each of the five published editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994). Of interest, however, are the changes in classificatory groupings it has undergone as the result of the development of our understanding of the concept. The evolution of DSM as a diagnostic tool has also played a part in this. Changes have been made to the criteria and groupings of many disorders, including those involving dissociative experiences.

Separate classifications in DSM I (American Psychiatric Association, 1952) of conversion reaction and dissociative reaction were united in the second edition under the label of hysterical neurosis (sub-divided into conversion type and dissociative type). The third edition, in an attempt to present an increasingly

atheoretical classification system, moved away from the aetiological grounding of psychological phenomena and towards a more descriptive approach (American Psychiatric Association, 1994). Hysterical neurosis (conversion type and dissociative type) were separated and have remained, since the publication of DSM III in 1980, grouped as somatoform disorders and dissociative disorders (Nemiah, 1989).

The fourth edition of DSM (American Psychiatric Association, 1994) recognises five dissociative disorders, which are characterised as follows;

- **Dissociative amnesia**; the individual is unable to recall important personal information which is usually traumatic or stressful in nature. The amnesia is too extensive to be explained by ordinary forgetfulness.
- **Dissociative fugue**; in which the individual suddenly or unexpectedly travels away from home or their place of work. Characteristic of a fugue is the inability to recall one's past and identity confusion, or the assumption of a new identity.
- **Dissociative identity disorder** (formerly multiple personality disorder); characterised by the presence of two or more distinct identities or personality states that recurrently take over control of the individual's behaviour. As in dissociative amnesia, the individual is also unable to recall personal information, and this is too extensive to be explained by ordinary forgetfulness.
- **Depersonalisation disorder**; this dissociative disorder is characterised by recurrent experiences of feeling detached from one's mental processes or body. The individual's reality testing is intact.
- **Dissociative disorder not otherwise specified**; individuals for whom dissociative symptoms are the predominant feature, but who do not meet the diagnostic criteria for any of the above dissociative disorders, are classified in this category.

The dissociative disorders identify dissociation in its capacity as a psychological syndrome. It is, however, also recognised as a "symptom cutting across syndrome boundaries" (Sanders & Giolas, 1991, p.50). Dissociative

symptoms are included in the DSM IV diagnostic criteria for; acute stress disorder, post traumatic stress disorder, somatization disorder, and borderline personality disorder. Though not classified as dissociative disorders, the importance of dissociation is recognised in these diagnoses. Some theorists point to evidence suggesting that these disorders (which are related by the underlying process of dissociation) have been artificially separated from the dissociative disorders, due to their descriptive dissimilarity. Shared aetiology in a dissociative mechanism has been largely ignored (Nemiah, 1998).

In addition to the above syndromes, high levels of dissociative symptoms have also been found to be common in a number of other disorders, though in these cases dissociative experience is not included by DSM as a diagnostic criterion. Studies have linked high reported levels of dissociative experiences to, for example: Bulimia Nervosa (Demitrack et al., 1990; Everill & Waller, 1995; McCallum, Lock, Kulla, Rorty & Wetzel, 1992; Schumacker, Warren, Screiber & Jackson, 1994); self-harm (McCallum et al., 1992; Shearer, 1994); and alcohol abuse (Shearer, 1994). These individuals, who do not reach the criteria for dissociative disorder, nonetheless may experience distressing levels of dissociation. The use of dissociation as a classifying agent does not emphasise the significance of dissociative symptoms in categories of psychopathological experience other than the dissociative disorders. Evidence suggesting the importance of dissociation in a range of disorders suggests that progress in the clinical utility of the concept of dissociation may be better made by regarding it as a feature or symptom of psychopathology, rather than a syndrome. For example, the close links between dissociative experiences and Borderline personality disorder have been addressed by Ryle (1997) in his development of the cognitive analytic perspective. He did not see categorical diagnosis as clinically useful here, and placed an emphasis on linking the surface manifestation to underlying processes. The present study will consider dissociation as more appropriately used in the study of mechanisms underlying psychopathology rather than as a distinct syndrome. Its place in a diagnostic structure (e.g., DSM) that seeks neutrality regarding theories of aetiology may therefore be problematic.

1.6 EPIDEMIOLOGY OF DISSOCIATION

Given the assumption that dissociation is a dimensional phenomenon with normal and pathological elements, the epidemiology of dissociation has been investigated in both clinical and normal populations. The findings of these studies are discussed below. Epidemiological studies of dissociation have informed our understanding of the area. However, they are limited by methodological and measurement difficulties.

1.6.1 Prevalence of Dissociative Experiences in Non-clinical Populations.

Normal population studies of dissociative experiences have consistently shown a positively skewed distribution. In other words, more individuals score at the lower end than at the higher end of the scale (e.g., Bernstein & Putnam, 1986; Ross, Ryan, Anderson, Ross & Hardy, 1989; Sanders, McRoberts, & Tollefston, 1989). However, though not normally distributed, evidence suggests that dissociative experiences are frequently reported in the general population (e.g.,Ross, Joshi & Currie, 1990; Ross, Ryan, Anderson, & Ross, & Hardy, 1989). In their community sample, Ross, Joshi & Currie (1990) found that 12.8% of participants scored above the proposed cut-off of 20 on the Dissociative Experiences Scale (DES, Bernstein & Putnam, 1986; Carlson & Putnam, 1993). The authors stated that this cut-off score indicates a 'substantial' number of dissociative experiences. Scores over 30 were reported by 5% of their sample, and were interpreted as being associated with the likelihood of Post-traumatic Stress Disorder (PTSD) or Multiple Personality Disorder (MPD). However, as previously discussed, there is little evidence to suggest that these scores reflect a prevalence of pathological experiences of dissociation. Give these conceptual problems with the DES it is difficult to accept Ross, Joshi and Currie's (1990) conclusions that prevalence of dissociative disorders in the normal population is between five and ten percent.

Using an alternative measure (the Dissociation Questionnaire, DIS-Q, Vanderlinden, van Dyck, Vandereycken & Vertommen, 1991), Vanderlinden et al. (1991) found that nearly 3% of their normal sample reported 'serious' dissociative experiences (cut off = 2.5). However, this measure sufferers from the same

disadvantages as the DES in its ability to measure different aspects of normal and pathological dissociation which have been identified in the recent literature (e.g., Waller et al. 1996).

Despite these difficulties, studies using these scales have made a contribution to our understanding of the demographic variables that affect scores on dissociation measures, and have been generative in suggesting theoretical conceptualisations of dissociation. Vanderlinden et al. (1991) investigated the effects of age, gender, educational level, nationality and marital status. The only variable significantly affecting scores was age. Reports of dissociative experiences (measured using the DIS-Q) declined with age. This appears to be a relatively consistent finding. Using the DES as a measure, Ross et al. (1990) also concluded that the degree of dissociation in the general population was independent of socioeconomic factors apart from age. The implications of this age effect are both theoretical and practical. First, it has been suggested that children and adolescents report dissociative experiences that are developmentally normal, but that would be an indicator of psychopathology in adulthood (Ross, Ryan, Anderson, Ross & Hardy, 1989; Carlson & Putnam, 1993). This has contributed to the emergence of developmental psychological theories of dissociation (see 1.7.1.1). Second, the literature has demonstrated that care must be taken in interpreting measures of dissociation. Reports of dissociative experiences, though the measures do not differentiate between pathological or normal experiences, are affected by variables such as age.

1.6.2 Prevalence of Dissociative Experiences in Clinical Populations

The same measures of dissociation have also been applied to clinical populations . However, as discussed above, the DES has been suggested to measure a different type of dissociation in clinical populations (Waller er al. 1996). Carlson and Putnam (1993) report the results of ten studies, presenting DES scores for a range of clinical populations (e.g., affective disorders, eating disorders, schizophrenia). Average scores were generally higher than those found in normal population samples. Saxe, van der Kolk, Berkowitz, Chinman, Hall, Lieberg & Schwartz (1993) administered the DES to a series of psychiatric

inpatients and found that 15% scored over 25. Of these, 100% met the DSM III criteria for a Dissociative Disorder, indicating a higher level of sensitivity than normal population studies (e.g., Sandberg & Lynn 1992).

Levels of dissociation have also been investigated among individuals who have reported retrospective accounts of childhood sexual abuse. A number of studies have reported significantly higher levels of dissociation in this group, when compared to general population (e.g, Briere & Runtz, 1988a). Anderson, Yaesnik & Ross (1993) reported an extremely high prevalence of dissociative disorders in their sample. Using the Dissociative Disorders Interview Schedule as a measure, 88.2% of those who retrospectively reported child sexual abuse fulfilled the criteria for a dissociative disorder. This figure is high, however, and it must be remembered that this sample was also a treatment seeking clinical group. Psychiatric inpatients were studied by Chu & Dill (1990). Eighty one percent of their sample, the majority of whom had reported that they had experienced childhood abuse, scored above levels observed in normal populations on the DES. As discussed in 1.4.3, the clinical significance of dissociation may go beyond the dissociative disorders. Prevalence research emphasises the importance of recognising high levels of dissociative symptomatology in a range of clinical groups. It has shown a prevalence of dissociative experiences that is very much higher in treatment-seeking groups than in the normal population.

1.6.3 Summary

High levels of dissociation in clinical populations and among those who retrospectively report childhood abuse emphasises the clinical importance of developing an understanding of dissociation. However, though epidemiological research to date has developed our understanding of dissociation, it is clear that there are a number of problems to overcome. There are difficulties with existing measures, and there is an absence of a solid theoretical understanding of what is being measured when the prevalence of dissociation is estimated.

1.7 AETIOLOGY OF DISSOCIATION

1.7.1 Psychological Theories of Dissociation

Aetiological theories of dissociation have been formulated from a number of theoretical perspectives. Each has attempted to provide an understanding of the construct, which has been identified as being particularly prevalent in clinical populations. However, in discussing these theories it is useful to note that each has made a contribution to our understanding of dissociation. Many address different aspects of the construct, with resulting different implications for intervention, rather than being exclusive of one another.

1.7.1.1 *Developmental Perspective*

Developmental theories of dissociation stem from the belief that discontinuity of experience and dissociative experiences are developmentally normal in childhood. Putnam (1993) offers the example that children often fall sleep and awake in different surroundings. They do not recognise the loss of time or find this experience particularly abnormal. Indeed, evidence demonstrates that the prevalence of dissociative experiences in childhood and adolescence is higher than in adult samples (e.g., Putnam, 1991). Putnam (1993) suggests that the normal age-related decline in dissociative capacity may be disturbed by traumatic experience. Interference in the normal developmental process of integrating dissociated islands of experience leads to the continuation of dissociative experiences into adulthood. As a result of more mature cognitive abilities, which allow the individual to reflect on dissociative experiences, they may then be considered to be abnormal, both by the individual and by those around them. McIntree and Crompton (1997) also draw on object relations theory in their developmental formulation of dissociation. A level of developmental maturity is required to carry out mental processing to integrate extremes of experience and 'part objects'. McIntree's trauma model suggests that when external boundaries are unclear and resources unable to cope with experienced trauma, the child will contain the trauma as best it can. The internal separation process of dissociation is available to them.

1.7.1.2 *Psychodynamic Perspective*

Psychodynamic theories of dissociation originate in Freud's structural model of the psyche (id, ego and super ego). Intra-psychic conflict between these structures results in the experience of anxiety. The risk of unsuitable material reaching conscious awareness not only causes anxiety, but also motivates the ego to strengthen its defences against hidden drives of the id. Thus, information is dissociated to prevent its emergence in a distressing form. Dissociative symptoms are hypothesised to be the emergence of disguised versions of distressing material (Bremner & Marmar, 1998). This structural model of intra-psychic conflict has been charged with disregarding external trauma. Psychodynamic conceptualisation were regarded as exclusive to 'traumatic experience' aetiological models of symptomatology. In particular, the disregard for the potential effects of childhood abuse has been problematic. However, current dynamic models of dissociation devote attention to the particularly damaging experience of childhood external trauma. The early phase of development of these intrapsychic structures is believed to be impacted on by traumatic experience. Premature arousal of sexual and aggressive drives, before a structure is in place to manage them, can overwhelm the individual, resulting in a greater need for defences such as dissociation (Nemiah, 1998).

1.7.1.3 *Cognitive Analytic Perspective*

Cognitive analytic theory is a relatively new perspective, and offers a framework primarily for the understanding of Borderline Personality Disorder (BPD). However, Ryle (1997) sees the surface manifestations of abrupt state switches in BPD as due to an underlying process of dissociation or fragmentation. Partially dissociated states are characterised by their patterns of reciprocal role procedures. These procedures, which organise relationships, are learnt early in life and determine overall patterns of relating and self-management (Ryle, 1997). As these procedures are acquired through interaction with the external environment (e.g., parents and caregivers), damage can occur in the developing system in response to threatening experience. Ryle proposes that there may be impairment of the procedural repertoire (i.e., the learning of abusive roles, not

learning nurturing roles) and of the integration of procedures (i.e., the sequencing and appropriate use of reciprocal role procedures). Difficulties in integrating separate reciprocal role procedures are hypothesised to result in dissociative symptomatology.

1.7.1.4 *Behavioural Perspective*

Behavioural aetiological theories of dissociative symptoms are based on the development of a conditioned fear response. Repeated exposure to a stressor results in an amplification of responsiveness to subsequent stressors (Bremner & Marmar, 1998). Dissociative symptoms are seen as the result of conditioned responding to cues in the environment. Classical conditioning is a form of learning not available for conscious recall. Therefore, this model addresses strong dissociative responses to stimuli in the absence of a contextual framework. Animal modelling of exposure to stress has also demonstrated an accentuation in the release of norepinephrine in animals with a history of stress exposure when they experience subsequent stress. It is believed that norepinephrine plays a role in modulating memory encoding and retrieval (Bremner & Marmar, 1998). This has implications for the development of dissociative symptoms.

1.7.1.5 *Psychophysiological Perspective*

There is considerable evidence to suggest that altered physiological functioning may play a role in dissociative experience. Hypoarousal has been observed in rape victims (Griffin, Resick & Mechanic, 1997). Carey, Butter, Persinger & Bialik (1995) discovered an inhibited physiological responsiveness in a study of abused children. These findings impact on conceptualisations of dissociation, given the importance of the autonomic nervous system in facilitating and blocking information processing. Other studies have also found significant alterations in hormonal functioning following exposure to stress or trauma (e.g., van der Kolk, Pelcovitz, Roth, Mandel, McFarlane & Herman, 1996; Trickett & Putnam, 1993). Physiological mechanisms may impact on normal mental processing and the integration of material. Therefore dissociation may be the result of disrupted or incomplete information processing due to physiological

variables.

Neurobiological findings have also contributed to our understanding of the effects of traumatic experience. Abnormalities in hippocampal functioning (Bremner, Krystal, Charney, & Southwick, 1996) and the amygdala (Bremner Krystal, Charney, & Southwick, 1996; Vanderlinden & Vandereycken, 1997; van der Kolk et al., 1996) have been implicated. The Hippocampus plays a role in bringing together information from diverse neocortical areas. Impaired functioning may lead to this information not being integrated. Implications are also wide ranging for abnormalities of the amygdala, a structure centrally involved in affective processing.

1.7.2 Implications of Existing Aetiological Models of Dissociation

Despite this broad range of theoretical approaches available to clinicians and researchers, dissociation is still little understood and is often not successfully treated. One reason for this failure may lie in the nature of the existing formulations. Reflecting on his cognitive analytic theory of dissociation, Ryle (1997) noted its limitations, describing it as a "new conceptual framework rather than a testable theory" (p.86). The lack of testable theories in the literature has not enabled clinicians to draw from an empirical base in formulating dissociative symptoms. Many of the models outlined above are essentially descriptive models of dissociation, rather than explanatory. The lack of a theory-led focus in the literature, which has relied on the traditionally psychiatric descriptive approach, offers little in terms of clinical utility (Tillman, Nash & Lerner, 1994). In addition, though the severe symptoms of dissociation such as those seen in DID are often accounted for, few models address the broad range of less extreme dissociative experiences (i.e., those not including multiple/alter personalities).

In practice, clinicians are exploring the use of cognitive-behavioural techniques to treat dissociation (e.g., Kennerley, 1996). However, with no theoretical base from which to work, evaluation and targeting of these techniques is problematic. There is a need to develop clear theory-practice links in the field of dissociation. Each of the above theories has elements that may be useful in developing a better understanding of the mechanisms involved. However, in order

to have clinical utility, a model of dissociation needs to be: 1) an explanatory, rather than a descriptive framework; 2) a testable and refutable theoretical perspective; and 3) a model that has applications in devising and targeting treatment.

1.7.3 Cognitive-Behavioural Perspective

A cognitive-behavioural model has recently been proposed by Kennedy and Waller (under consideration). It addresses a number of the problems identified in previous models and unifies some of the findings in a single model. It is based on Beck's (1996) theory of personality modes and psychopathology. They propose three forms of dissociation, the behavioural manifestations of which are the result of decoupling at three information processing levels - orienting schema, within-modes, and between-modes.

Existing theories of functional inhibitory mechanisms have been drawn on (Dixon, 1981, inhibitory model of subliminal processing; Melzack & Wall, 1965, gate control theory of pain). The theory is, therefore, one of functional decoupling, central to which are biological mechanisms as well as a psychological theory of personality. Decoupling serves a function for individuals who have experienced trauma, enabling cognitive avoidance of information and distress linked to the experience. This model is explanatory rather than descriptive, and is open to testing and refutation. One of the most important aspects it offers is in the explicit predictions it makes, linking the underlying decoupling mechanism to behavioural manifestations of dissociation. Each of the levels of dissociation will be discussed in reference to the schematic representations shown in figures 1 and 2 (source: Kennedy & Waller, under consideration). Figure 1 shows a schematic representation of the dissociative mechanism at levels one and two, which constitute within-mode dissociation. Figure 2 is a schematic representation of between-mode dissociation which occurs at level three.

The first level of dissociation occurs early in the information processing system, at the level of the orienting schemata. Before entering conscious awareness and being passed onto the modes, orienting schemata determine which information is particularly worth processing, and link it to other relevant

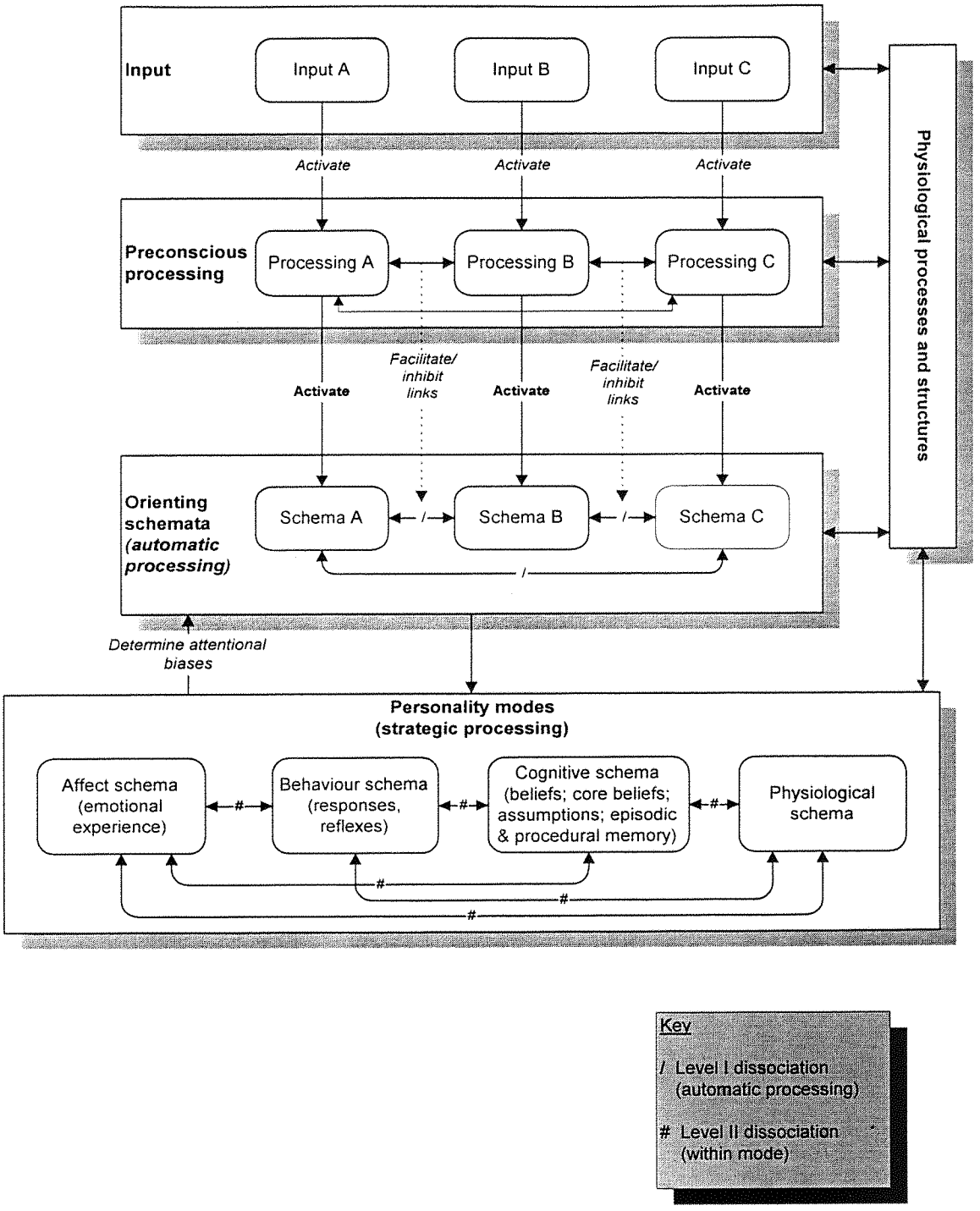
information. The inhibitory mechanism serves to reduce the likelihood of the activation of other orienting schema (which may contain representations of traumatic experience). As the possibility of forming connections with other relevant orienting schema is reduced, material may reach a conscious level without being linked up to its contextual origin. Thus, activation of disturbing memories or percepts without awareness of their triggers results in symptoms such as flashbacks, intrusions, hallucinations, delusions and fragmented recall.

Level two decoupling is a further dissociative strategy, hypothesised to occur if disturbing information gets through level one into awareness. Fragmentary processing of information results from decoupling of links between schemata (affective, cognitive, behavioural, physiological) within each personality mode. Symptoms resulting from within-mode dissociation include: flattened affect, ritualistic behaviours, somatic symptoms, and analgesia. For example, decoupling of the behavioural and cognitive schemata may result in ritualistic or superstitious behaviours, for which the individual has no rationale.

The third level of dissociation - between-modes - represents the mechanism underlying the most severe dissociative symptoms. Beck (1996) proposes that individuals have a number of personality modes, each adapted to different functions. Communication between them is normally good. However, either partial or total decoupling (resulting from inhibition of links between-modes) would predict symptoms such as amnesia, impulsive behaviours, depersonalisation, derealisation, and multiple/alter personalities.

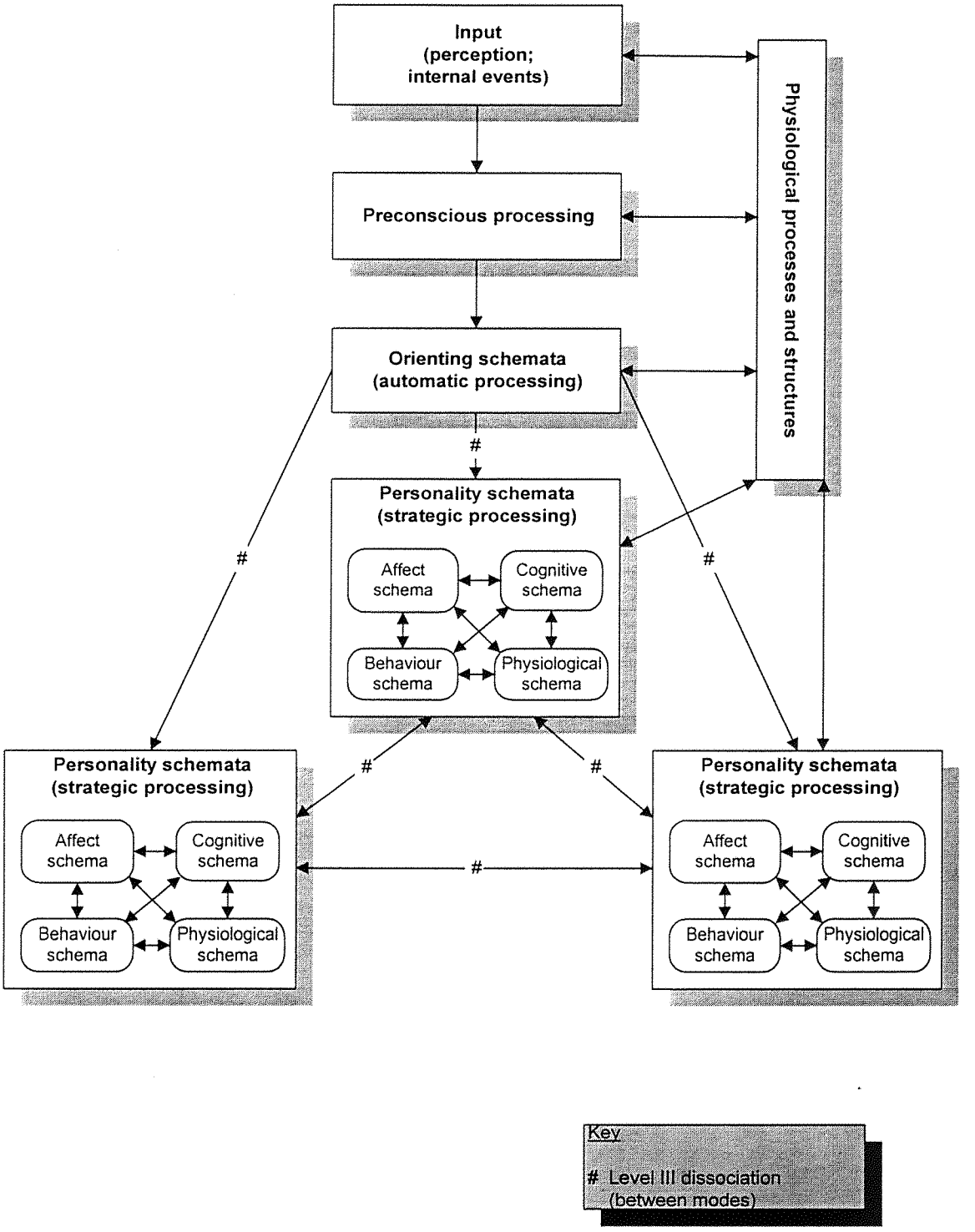
This cognitive-behavioural conceptualisation is testable, in that it is possible to investigate if the three levels are distinguishable. Behavioural manifestations hypothesised as resulting from the same mechanisms should present in the same individuals experiencing dissociation at that level. Furthermore, it is assumed that higher levels incur a greater functional cost than lower levels. This theory is hierarchical in nature, that is to say that level one symptoms may present in the absence of other symptoms, but level three symptoms should not occur without those associated with lower levels. This prediction of the theory is also open to refutation.

Figure 1 Schematic representation of cognitive structures involved in dissociation (automatic and within-mode level)



Source; Kennedy & Waller (under consideration)

Figure 2 Schematic representation of cognitive structures involved in dissociation (between-modes level)



Source; Kennedy & Waller (under consideration)

In terms of targeting interventions, pinpointing decoupling at one or more of the three information processing levels directs treatment to the specific process. Dissociation is not treated as a unitary construct, but can be broken down into its process parts and each treated with appropriate methods.

1.8 CAUSAL MODELLING APPROACH TO DISSOCIATION AS A MEDIATOR

The cognitive-behavioural model of dissociation, outlined above, offers a basis for developing an understanding of the psychological role of dissociation. Much of the research into dissociation has taken place without the explanatory theoretical basis that this approach offers. Dissociation has been identified as an important area for investigation. In the empirical literature, relationships have been identified between dissociation and a number of variables. A link between trauma and dissociation is implicit in many of the aetiological models of dissociation discussed above. Research has also demonstrated that dissociative symptoms are not confined to individuals with dissociative disorders (see 1.5.3). As previously concluded, dissociation may be more appropriate to the investigation of the underlying mechanisms of psychopathology than a dissociative syndrome.

Janet's (1889) original conceptualisation of dissociation was as the psychological process by which traumatic experience was transformed into psychopathology. Without a clear model of dissociation, this hypothesised link between trauma, dissociation and psychopathology has been difficult to explain. Many investigations which have involved trauma, dissociation and psychopathology have been interested in investigating inter-relationships but have not often considered these variables as part of a psychological process. Research on dissociation has rarely moved beyond an exploratory or descriptive stage of investigation. The inter-relationships have often been investigated in a theoretical vacuum concerning the place of dissociation within the psychology of trauma-spectrum disorders. Measures of dissociation have been included routinely in clinical studies involving trauma and psychopathology in response to robust findings concerning its association with these variables. However, few papers engage in a discussion of its place in a theoretical model. Though aetiological models of dissociation which do discuss this are available, it seems few have

been applied in clinical research (in most cases, probably due to their untestable nature, see 1.8.2). For the results of research to be clinically useful in treating dissociation, not only do the correlations between variables need to be explored, but, hypotheses regarding their causal relationships need to be formulated and tested. This present study is concerned with the three variables of trauma dissociation and psychopathology. There are a number of different models of how they may fit together. Given current evidence from exploratory studies of PTSD van Ijzendoorn & Schuengel (1996) suggest there are many possible models of the relationship, for example they describe these three explanations for observed intercorrelations;

a) Trauma ⇨ Dissociation ⇨ Psychopathology

b) Trauma ⇨ Dissociation
Psychopathology

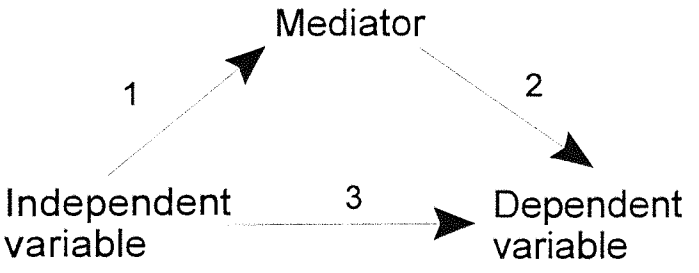
c) Trauma ⇨ Psychopathology ⇨ Dissociation

The present study is an attempt to investigate these interrelationships in a theoretically - driven rather than an exploratory manner. The cognitive-behavioural approach described above offers a firm theoretical base for investigation of the first of these models.

The most appropriate method of investigation here is mediational modelling (e.g., Baron & Kenny, 1986). This accepts that an understanding of psychological phenomena is not always achieved by the investigation of simple cause-effect models. Causal theories, such as those between trauma and psychopathological outcome, often find themselves in need of an account of the relationship between the predictor and the criterion. This is where mediator variables can contribute. Identification of a mediator is part of developing an understanding of the translation which occurs between cause and effect. Theoreticians in psychology have long recognised the need for mediators in cause-effect relationships, such as Woodworth's S-O-R paradigm, in which the organism (O) is the mediator variable between stimulus (S) and response (R) (Baron & Kenny, 1986). Figure 3 represents a basic mediational model. A relationship between the independent variable and dependant variable may be already established. However, there are a number of paths by which this relationship may operate. The path referred to as

'3' in Figure 3 is the direct cause-effect path. The path in which the mediator is operating is marked '1' and '2'. If the mediator path (1 & 2) is understood, its effect on the direct path (3) can be established.

Figure 3 The structure of a mediational model



(Source; Baron & Kenny, 1986)

1.8.1 Is Dissociation An Appropriate Mediator Variable in the Relationship Between Trauma and Psychopathology?

Mediational models seek to identify the generative mechanism through which the predictor (IV) affects the criterion (DV). Dissociation has been suggested to be of this nature, an underlying generative mechanism, rather than an outcome variable (e.g., van de Kolk & Fisler, 1995; Nemiah, 1998; Janet, 1889). In its links to trauma and psychopathology, dissociation is a potential mediator variable in this relationship. Given the recent development of an explanatory model of dissociation, it is appropriate at this time to clarify how this conceptualisation would be best understood in context of variables with which dissociation is related.

In terms of clinical utility of psychological models, mediational modelling is especially important if the predictor cannot be manipulated. In the case of the link between trauma and psychopathological outcome, experience of trauma cannot be undone or un-experienced. Treatment of the pathological manifestation is also often not successful, as underlying mechanisms responsible for its maintenance may still be in operation. Therefore, the identification of dissociation as a mediator variable would have implications for treatment of trauma-related psychopathology.

If dissociation is a mediator in the relationship, then it could be targeted in treatment, and the cognitive-behavioural theory of the mechanism could be used.

The criteria for investigating the potential mediator effect of a variable (Baron & Kenney, 1986) are that: the independent variable (in this case, trauma) affects the dependent variable (psychopathology); that the independent variable (trauma) affects the mediator (dissociation); and that the mediator (dissociation) affects the dependant variable (psychopathology). Therefore, before developing the mediational model further, evidence for each of the individual paths 1, 2 and 3 (see Figure 3) will be discussed.

1.8.2 Bivariate Relationships Identified in the Literature

1.8.2.1 *Evidence of A Phenomenological Link Between Trauma and Psychopathology.*

Much of the research investigating the relationship between trauma and psychopathology is focussed on self-reported histories of sexual abuse. The adult mental health sequelae of childhood abuse have been recognised as important, especially following the increase in awareness of the extent of these traumatic experiences (see 1.3). Studies have looked at effects on general mental health, psychopathology and specific trauma-related psychiatric disorders. Although much research has contributed to a knowledge base in this area, Shearer (1997) points out that we are yet to establish a direct causal relationship between child abuse and adult dysfunction. The limitations of childhood trauma research must also be bourne in mind (see 1.4). However, despite many difficulties in inferring a causal relationship, research findings suggest that a reported trauma history is an important variable in adult symptomatology.

Briere & Zaidi (1989) studied a series of patients attending a psychiatric emergency room. They reported a link between a reported history of sexual abuse and a higher rate of psychological difficulties. Diagnoses included suicidality, substance misuse and axis II psychopathology (notably, borderline personality disorder). Other studies investigating general psychopathology also report higher levels in individuals who report a history of abuse. For example, research using a variety of measures of psychological functioning and symptomatology has come

to similar conclusions (e.g., General Health Questionnaire - Mullen, Martin, Anderson, Romans & Herbison, 1993; Symptom Checklist-90-Revised - Margo & McLees, 1991; Brief Symptom Inventory - Greenwald, Leitenberg, Cado & Tarran, 1990; Minnesota Multiphasic Personality Inventory - Engels, Moisan & Harris, 1994). However, much of the above research has been focussed on female subjects, as has the majority of the sexual abuse literature. Less attention has been paid to potential differences in the adult sequelae of childhood abuse in male subjects. More recently, the reasons for this have been investigated (e.g., Holmes et al., 1997). Little support was found for the hypotheses that few males experience sexual abuse and that its effects are less damaging. Holmes et al. (1997) conclude that male sexual abuse has not been socially constructed as a recognised phenomena, and as a result male victims are less likely to disclose abuse or to be asked about abuse experiences, and are more likely to deny the impact abuse has on them. Findings from data gathered on male and female soldiers support the general conclusions of previous studies (which have looked only at females). Negative outcome (measured in symptoms) was found to be related to reports of childhood abuse, most notably physical-emotional and sexual abuse (Rosen & Martin, 1996). Some differences in individual outcome variables were observed between gender groups. However, it was concluded that male and female subjects had similar responses to reported abuse experiences (Rosen & Martin, 1996). Therefore, there is reason to include males in studies of childhood abuse. In fact, our understanding of the mental health sequelae associated with abused males needs developing if we are to treat abuse-related issues in adult males appropriately.

The relationship between a reported history of abuse and psychopathology has received a substantial degree of attention in recent years. The numerous studies investigating the trauma-psychopathology link have been brought together in reviews and meta-analyses. One of the first comprehensive reviews of the studies available in this expanding area of research was published in the 1980's (Browne & Finkelhor, 1986). The impact of sexual abuse was broken down into initial and long-term effects. Long-term effects identified in the literature included depression, self-destructive behaviour, anxiety and substance abuse. A later

meta-analysis (Jumper, 1995) concluded that experience of sexual abuse accounted for 7% of the observed variance in adult symptomatology (though most of the studies included in the meta-analysis are subject to the difficulties associated with the use of retrospective self-report of abuse). Among a child population, a similar analysis reported a very much higher figure, with 15-45% of variance in symptomatology accounted for by abuse experience, (Kendall-Tackett, Williams & Finkelhor, 1993). Research has also progressed to the study of specific clinical populations. Various studies have found reports of childhood abuse to be important in: depression (e.g., Briere & Runtz, 1993); PTSD (e.g., Briggs & Joyce, 1997); anxiety (e.g., Browne & Finkelhor, 1986); and eating disorders (e.g., Miller, McCluskey-Fawcett, & Irving, 1993).

It would seem there is agreement in much of the literature suggesting a relationship between trauma and psychopathology. Studies are difficult to compare directly, given the variation in methodology, including definitions of abuse, population studied, and data collection procedures (Sheldrick, 1991; Sheerer, 1997). However, evidence from meta-analysis of studies (using varied methodologies) suggests that the effect of such confounding variables has been overestimated (Jumper, 1995). Although some methodological difficulties, such as reliance on retrospective self-reports of abuse are still problematic, differences in, for example, definition may not present as significant a problem as is often assumed. However, differing definitions between studies have highlighted the diverse nature of childhood abuse. Recent studies have acknowledged that trauma comes in different forms, as does psychopathology. Differences in forms of abuse in childhood have been suggested to be reflected in differences in adult difficulties (Mullen et al., 1993). However, the available data show no clear separation.

Though individuals who report a history of childhood sexual abuse generally have higher scores on measures of psychopathology, less than one-fifth of this population display serious pathology (Browne & Finkelhor, 1986). The trauma-psychopathology relationship is not a simple one. An explanatory mediator is needed in order to clarify the relationship.

1.8.2.2 *Evidence for A Phenomenological Link Between Trauma and Dissociation.*

Since Janet's early theory, dissociation has been conceptualised as a response to inescapable trauma (van der Kolk & van der Hart, 1989). Although the mechanism by which traumatic experience leads to dissociation has been poorly understood, there is evidence that the two phenomena are associated. For example, in a study of female psychiatric inpatients, those participants who retrospectively reported a history of childhood sexual abuse also reported higher levels of dissociation than participants reporting no child sexual abuse (Chu & Dill, 1990). Recently, studies investigating a range of populations have supported this conclusion. For example, research focussing on female psychiatric outpatients reported similar results (Waldinger, Swett, Frank & Miller, 1994). A study among non-clinical college students has also investigated the link between childhood trauma and dissociation. Sanders & Becker-Lausen (1995) found that student's scores on the Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995) correlated with scores on the DES, and concluded that higher reported levels of childhood trauma were related to high levels of dissociative experiences. This study focussed not only on experiences of sexual abuse, but on childhood maltreatment (including punishment and neglect) and all subscales were related to the measure of dissociation. However, the abuse type subscales were themselves intercorrelated. A later study (Kent & Waller,1998), which also included an emotional abuse subscale, also showed significant correlations between abuse type subscales (the highest correlation being between emotional abuse and neglect, .79 and the lowest between emotional abuse and sexual abuse, .38). Therefore, although the relation of each form of abuse to dissociation is not being measured in isolation from other, the intercorrelations suggest the subscales are measuring related but not identical experiences.

Epidemiological studies of dissociation suggest that higher levels of dissociative experiences are part of normal development in childhood and adolescence (see 1.6.1). However, even given the high base rate in these populations, elevated levels of dissociation have also been linked to abuse experiences in young people. Compared to those who are not abused, a higher

percentage of maltreated children have reported an increased or pathological level of dissociation (Putnam, 1996). Among an adolescent inpatient population, DES scores have also been found to correlate with self-reported physical abuse, sexual abuse, psychological abuse and neglect (Sanders & Giolas, 1991). Although much of the literature focuses on childhood abuse, other traumatic experiences have also been linked to higher levels of dissociative experience (e.g., familial loss - Irwin, 1994; war zone exposure in Vietnam theater war veterans - Zatzick, Marmar, Weiss & Metzler, 1994). This study will, however, focus on childhood experiences of abuse.

Within the cognitive-behavioural framework outlined above, an explanatory (rather than a descriptive) account of this bivariate relationship can be proposed. In this model, dissociation serves the function of reducing the potential for activation of distressing/traumatic information. The proposed mechanism by which this occurs is one of functional inhibition. Furthermore, the hierarchical nature of Kennedy & Waller's model may also explain other findings in the data. A positive relationship has been observed between the severity of reported trauma and the number of reported dissociative experiences (e.g., Heath, Bean & Feinauer, 1996). This relationship is not easily explained by previous models of dissociation. From the cognitive-behavioural perspective, dissociating distressing information incurs progressively higher functional costs. As decoupling occurs later in the information processing system, the cost to the individual (in terms of symptomatology) increases. Within this model, the higher levels of dissociation are only used when the less costly levels are unable to prevent aversive representations from being evoked. Following a severe traumatic experience, dissociated information may be less likely to be contained by decoupling of representations at levels one or two. The predicted result would be symptomatology at multiple levels, rather than at a single level.

Despite the evidence from studies cited above, criticisms have been made of the weight that has been put on the trauma-dissociation relationship. Tillman et al. (1994) have rightly pointed to the fact that trauma does not invariably lead to high levels of dissociative experiences. Within the cognitive-behavioural theory, this failure to dissociate would occur when the inhibitory mechanism was not

activated. As this mechanism is functional, if it is not needed, it is not used. The individual may be able to tolerate awareness of and process information relating to the experience. Alternatively, binge-eating and substance abuse have been suggested to be alternative but distinct strategies to reduce/block awareness of representations relating to traumatic experience (van Ijzendoorn & Schuengel, 1996).

1.8.2.3 *Evidence for A Phenomenological Link Between Dissociation and Psychopathology.*

Evidence for considering dissociation as an underlying feature of psychopathology (rather than a classification agent) has been discussed above (see 1.5). If dissociation is to be considered as other than a small group of psychopathological syndromes, there is a need to investigate its relationship with psychopathology. A number of studies have looked at levels of dissociative experience in clinical populations. In 1993, Carlson & Putnam reported the results of ten studies using the DES to measure dissociation in psychiatric and normal populations. The measure has now been used in over 100 studies. Van Ijzendoorn & Schuengel (1996) presented an updated summary of data in their meta-analysis of studies using the DES. Table 1 shows the pooled means (and in some cases medians) from samples of participants in 15 clinical and non-clinical groups. The meta-analysis showed similar group differences in DES scores to those in the ten earlier studies reported by Carlson and Putnam (1993).

Table 1 Mean DES Scores of Different Diagnostic Groups

(Source; van Ijzendoorn & Schuengel, 1996)

Diagnostic group	number of studies	N	Mean DES score
MPD	18	472	45.63
Dissociative disorder unspecified	4	143	41.15
DDNOS	6	121	35.29
PTSD	9	259	32.58
Abused	3	238	27.06
War Veteran	3	62	20.58
Affective Disorder	3	81	19.43
Schizophrenia	4	63	19.10
Personality Disorder	7	462	16.80
Psychiatric Patient	16	1302	16.39
Eating Disorder	11	345	14.51
Student/Adolescent	21	5676	14.40
Normal	11	1578	11.05
Anxiety Disorder	5	468	10.16
Seizure Disorder	3	130	8.12

In addition to high reported levels of dissociative experience, McCallum et al. (1992) found that dissociation was temporally associated with problem behaviours (e.g., binge/purge cycle) in their eating-disordered sample. This would suggest that dissociation may have a functional role in these behaviours. A number of studies have also noted a relationship between dissociative experiences and self harm/suicide (McCallum et al., 1992; Demitrack et al., 1990; Bagley, Rodberg, Wellings, Moosa-Mitha & Young, 1995). These are all 'high cost' clinical problems, with patients often showing poor response to intervention. Evidence suggests that dissociative experiences may be related to many of them. Underlying dissociative mechanisms may need treating before behavioural

manifestations can be successfully addressed.

The descriptive nature of many models of dissociation is not helpful in identifying targets for treatment of presenting psychopathological symptomatology. However, the cognitive-behavioural conceptualisation (Kennedy & Waller, under consideration) closely links symptomatology to an underlying model of dissociation. Rather than the nebulous treatment aim of 'integrating' dissociated information, the model allows targeting of the specific information processing level (orienting schema, schemata within a personality mode, personality schemata) at which decoupling has occurred. Therefore, the underlying mechanism resulting in presenting psychopathology can be focussed on.

Previous investigations of the link between dissociation and psychopathology are complicated by the broad range of symptomatology observed to result from a single dissociative construct. While psychopathology has been associated with high levels of dissociation, a single dissociative symptom profile has not been identified. Decoupling at different levels of information processing makes comprehensible the wide range of psychopathology associated dissociative experiences. Previous research has highlighted the need to consider dissociation and psychopathology further. The cognitive-behavioural framework makes clear predictions in the relationship between the variables of dissociation and psychopathological symptoms.

1.8.3 The Place of Dissociation in the Link Between Trauma and Psychopathology

Previous research has considered dissociation as both an underlying mechanism and a mediator linking trauma and psychopathology. Recent studies have addressed the possible mediating role of dissociation in the relationship between reports of abuse and negative outcome (e.g., Becker-Lausen, Sanders & Chinsky, 1995; Ross-Gower, Waller, Tyson & Elliott, 1998). Results in a non-clinical population suggest that dissociation mediates the outcome of reported experiences of childhood maltreatment (Becker-Lausen et al., 1995). Evidence has also been presented from a female clinical population, suggesting that the link

between reports of sexual abuse and psychopathology is mediated by levels of dissociation (Ross-Gower et al., 1998).

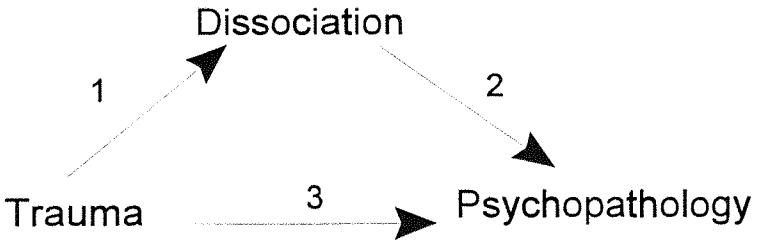
Based on the limited available evidence, a number of authors have proposed a central theoretical role for dissociation in specific clinical disorders. The observed pattern of memory retrieval following trauma has led some theorists to identify dissociation as the central pathogenic mechanism in the development of PTSD (van der Kolk & Fisler, 1995). A model has also been proposed linking trauma, dissociation and the development of bulimic symptomatology (Everill & Waller, 1995). The model proposes that dissociative schemata develop in response to trauma. Stage two of the model addresses the development of bulimic symptomatology as a response to the emotional distress experienced when cognitive blocking (in the form of dissociation) is unable to contain trauma-related schemata. These models are specific to eating disorders (and other impulsive behaviours) and PTSD. However, they place dissociation in a central role in the relationship between trauma and psychopathology.

This research outlined above is an important step forward in our understanding of the role of dissociation in the relationship between traumatic experience and psychopathology. However, it is limited by the specific focus on sexual abuse (Ross-Gower et al., 1998), non-clinical samples (Becker-Lausen et al., 1995) and specific clinical groups (Everill & Waller, 1995; van der Kolk & Fisler, 1995).

1.8.3.1 *Mediational Model of Dissociation*

The proposed model places dissociation as a mediator in the relationship between trauma and psychopathology. Figure 4 outlines the mediational role of dissociation and the links that will be investigated in this study. It is based on the bivariate relationships evidenced in the literature (see 1.8.2). The mediational model is building on this exploratory and descriptive research and drawing on the cognitive-behavioural theory of dissociation (see 1.7.3).

Figure 4 Mediational model of dissociation in the relationship between trauma and psychopathology



Testing this simple mediational model is a theoretically grounded investigation of the place of dissociation in trauma-spectrum psychopathology. This is a necessary step in order for dissociation research to move beyond descriptive studies. If dissociation is a mediator in the relationship between trauma and psychopathology, path 3 will not be evidenced when the effect of paths 1 and 2 are removed.

1.9 AIMS OF THIS STUDY

- This study aims to investigate the role of dissociation in the link between trauma and psychopathology. An empirical test of its role as a mediator between reports of childhood traumatic experience and psychopathology will extend previous research in this area.
- The study also aims to test the predictions of the cognitive-behavioural model of dissociation and the psychometric properties of the measure based on it (the Wessex Dissociation Scale). The presence of hypothesised three levels of dissociation and the hierarchical nature of those levels will be investigated.

1.10 SPECIFIC HYPOTHESES

The central aim of the study is to investigate the role of dissociation as a mediator in the relationship between trauma and psychopathology. In order to achieve this aim, the following specific hypotheses will be tested.

- *Hypothesis 1*; Previous findings of bivariate relationships will be replicated.
  - a) retrospective self-reported levels of trauma will be positively related to self-reported levels of dissociative experiences.
  - b) self-reported levels of dissociative experiences will be positively related to self-reported levels of presenting psychological symptomatology.
  - c) retrospective self-reported levels of trauma will be positively related to self-reported levels of presenting psychological symptomatology.
- *Hypothesis 2*; self-reported levels of dissociative experiences will mediate the relationship between retrospective self-reported traumatic experience and self-reported psychological symptomatology.
- *Hypothesis 3*; It will be possible to distinguish three forms of dissociation based on psychological processes and measured by the WDS. Those three forms of dissociation will form a hierarchy. The more severe forms will only occur in the presence of the less severe forms. These three levels will contribute to the mediational model.

Chapter 2

METHODOLOGY

2.0 METHODOLOGY

2.1 DESIGN

A patient series design was used for the clinical sample in the present study. There are a number of reasons for this. Firstly, the central aim of the study is a modelling approach. The patient series design involves detailed analysis of individual clients presenting for treatment, in order to develop a general model (Owens, Slade & Fielding, 1989). Of interest here is the development of an understanding of the relationship between individual presentations of trauma, dissociation and psychopathology, rather than average group scores per se. Secondly, these variables are not practically or ethically amenable to experimental manipulation in a way that would represent a valid exploration of clinical presentations. The patient series design also offers ecological validity above that of an experimental design. As the clinical utility of the mediational model and the cognitive-behavioural theory of dissociation are of importance, it is appropriate to carry out research in a population representative of clients presenting at clinical services. This clinical patient sample will be contrasted with a randomly selected group of non-clinical volunteers.

2.2 ETHICS ISSUES

Ethical approval for the study was first sought from the Multicentre Research Ethics Committee (MREC). This is required if the study involves more than five centres, which the present study does. Once approved by the MREC (see Appendix 1), it was submitted to the appropriate Local Research Ethics Committees (Bolton, Isle of Wight, Portsmouth & SE Hampshire, Southampton & SW Hampshire, University of Southampton, West Dorset, West Middlesex University Hospital).

2.3 PARTICIPANTS

There were two groups of participants. The clinical group was drawn from referrals to adult mental health services, and the non-clinical group was drawn mainly from a university student population.

2.3.1 Clinical group

The individuals approached to participate in the study were referrals to participating Adult Mental Health Services, and met the following inclusion/exclusion criteria.

Inclusion criteria. All male and female referrals between the ages of 18 and 65 who agree to take part, except those who met the exclusion criteria.

Exclusion criteria. Patients with the following diagnoses: organic disorders (e.g., dementia); learning disability. Patients who are distressed at the time when they might be approached. Patients who withhold or withdraw consent.

Forty individuals agreed to participate and completed the questionnaires. The mean age of the sample was 34.1 years (SD = 11.12, range 18 - 56). The patient series sample was predominantly female (male 15%, n = 6/40; female 85%, n = 34/40), reflecting the generally higher referral rate for female clients to psychology services. Participants were also asked to report their marital status and occupation. Of this group, 15 were single (37.5%) and 15 married (37.5%), six were co-habiting (15%), one was separated (2.5%), and three participants were divorced (7.5%). Reported occupations were varied and included nine participants who were not working at present, five housewives, five students, five administrative/clerical workers and two nursery nurses. The remaining occupations (n = 11) were each reported by only one participant (company director, designer-illustrator, dog groomer and trainer, environmental health and safety manager, fitness instructor, foster carer, landscape gardener, local government, shop assistant, storeman, veterinary surgeon).

A self-report of previous psychological treatment showed that of the 36 who responded, 75% (n = 27/36) had received psychological treatment previous to the current assessment. Reasons for treatment included depression (mentioned by 11 participants), eating disorder (n = 5), anxiety (n = 3), phobia (n = 2) and overdose/self-harm (n = 2).

2.3.2 Non-clinical group

This group were volunteers, mostly drawn from an undergraduate population. There were no exclusion criteria in this group.

This group consisted of 49 participants (male 20.4%, n = 10/49; female 79.6%, n = 39/49). The mean age of the sample was 23.96 years (SD=7.33, range 19 - 52). Participants were also asked to report their marital status. As expected, the majority of this group were single (87.8%, n = 43). Five participants were married (10.2%) and one was separated (2%).

A self-report of previous psychological treatment showed that of the 48 that responded, only 5 participants (10.4%) had received psychological treatment. Two participants specified they had received counselling, but not the reason for this. A further three participants had received psychological treatment for depression (n = 2) and eating disorders (n = 1).

2.4 PROCEDURE

Seven clinicians from six clinical psychology services were involved in data collection for the clinical sample in this study. The collection of the data was co-ordinated by the author. The measures reported here were administered as part of a larger multi-centre study of dissociation. Once completed, questionnaires were returned for scoring and analysis to the central co-ordinating base for the project (at the University of Southampton). The consent form and a record of the participant's identity was kept by the clinical psychologist and not passed on with the completed questionnaires. This was in order to preserve participants' anonymity. Questionnaires for the non-clinical group were administered by the author at the co-ordinating base.

Participants in the clinical group were approached regarding participation and all questionnaires were completed during the assessment period (i.e., before any planned intervention began). This ensured that the results were a measure of presenting symptoms and experiences, rather than an artefact of a later intervention. Important here are issues such as those raised by the recovered/false memory debate (see 1.3), regarding the effects of therapeutic techniques on reporting abusive experiences. Potential participants were

approached by their clinical psychologist and provided with an information sheet explaining the research (see appendix 2). The client was then given the opportunity to ask questions. If they agreed to participate, written consent was obtained (see appendix 3). Participants in the non-clinical group also gave informed consent in the same way (see appendices 4 & 3). However, they were not approached in the same way. They were recruited mainly through posters asking for volunteer participants.

Participants in both groups were asked to give some demographic information (see appendix 5) and then completed the questionnaires. Due to the potentially distressing nature of some of the questionnaires included in the study (e.g., Child Abuse and Trauma Scale), the clinical group was required to complete them within the clinic. It was not necessary that the clinician be present at the time, but that the participant had a safe environment in which to complete the questionnaires. Feedback was then returned to the clinicians in the form of questionnaire scale and subscale scores, summaries of the scores of the sample to date, and normal population means with which to compare results. However, this feedback was given only if the participant had given permission for the clinician to receive results of the research.

Participants in the non-clinical group filled in the questionnaires during individual test sessions. They were not given feedback concerning the responses they gave, though they were offered a debriefing discussion with the researcher if they wished to discuss the study.

2.5 MEASURES

The measures used were a subsection of those used in the larger study and, in total, participants completed up to eight questionnaires. However, the present study is concerned with the variables of trauma, dissociation and psychopathology. Five measures were chosen to assess these variables. Each will be described below with reference to its subscales and psychometric properties.

The measures described in this section were administered to the following groups;

The clinical group completed;

Wessex Dissociation Scale, Dissociative Experiences Scale-II, Child Abuse and Trauma Scale, Millon Clinical Multiaxial Inventory-III.

Due to the unsuitability of the MCMI-III for use with a non-clinical population (Millon Millon, & Davis, 1994), this measure was replaced with one which was suitable for the population. The non-clinical population completed the following questionnaires;

Wessex Dissociation Scale, Dissociative Experiences Scale-II, Child Abuse and Trauma Scale, Symptom Checklist-90-R.

2.5.1 Wessex Dissociation Scale (WDS)

The WDS (see appendix 6) is a theoretically driven measure of dissociation based on a cognitive-behavioural conceptualisation of dissociation (see 1.7.3). It has been designed to overcome some of the difficulties in existing measures of dissociation (see 1.4.2). It is to be used for the first time in the present study. Therefore, as yet no data exist on its psychometric properties. Initially, the scale was developed from items generated by a panel of clinical psychologists experienced in working with dissociative symptoms and syndromes. A preliminary questionnaire was piloted with ten clients to ensure item comprehensibility, and there were no problems reported.

This 40-item scale asks participants to report the frequency of experiences described, on a six point Likert-type rating scale (0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often, 5 = all the time). Therefore the reported mean score on each of the subscale ranges from 0 - 5, with a higher score indicating more dissociative experiences of the form corresponding to level 1, 2 or 3 (see appendix 11 for detailed scoring).

The theory underlying the measure proposes that dissociation (decoupling) occurs at one or all of three information processing levels (orienting schemata, personality schemata and personality modes). Linked to these three levels are three forms of dissociative symptoms. These correspond to the WDS subscales;

- *Level 1 (automatic functions)*

  This level of dissociation involves a decoupling of threatening information

by an inhibitory mechanism at the preconscious processing stage. This inhibition of the normal pattern of association between events results in, for example, a memory being triggered, but no connection being made to the stimulus that triggered it. Due to the lack of any contextual connection, that memory is experienced as a flashback. This type of dissociation has clear links to a number of specific symptoms, including: hallucinations, flashbacks, nightmares, misperceptions, paranoid feelings, anxiety and panic reactions. These are measured by the Level 1 subscale (7 items).

- *Level 2 (within-mode dissociation)*

  This form of dissociation involves a decoupling of schemas at the stage of strategic processing. Specific links between different components of personality function (affect schema, behavioural schema, cognitive schema, physiological schema) are inhibited when threatening information is processed. The Level 2 subscale (12 items) addresses another group of symptoms, including: derealisation, psychosomatic symptoms, inability to experience emotion, behavioural re-enactment of trauma.

- *Level 3 (between-mode dissociation)*

  This form of dissociation involves a decoupling of schemas across 'personality modes' (Beck, 1996). Individuals have different ways of dealing with the world, depending on the context. Each 'mode' of functioning involves a different set of personality schemas (affect, behaviour, cognition). The different modes usually communicate effectively, and this pattern of processing information in a context-dependent way causes no difficulties. This form of dissociation occurs when the links between schemas across modes are inhibited. This pattern of dissociation addresses level 3 subscale dissociative symptoms (21 items). These include: depersonalization, amnesia, 'state-switching', multiple personalities, mood swings, fugues.

2.5.2 Dissociative Experiences Scale (DES-II)

The DES (see appendix 7) was devised by Bernstein & Putnam (1986) and was later revised (DES-II) by Carlson & Putnam (1993). It is a measure of the

frequency of dissociative experiences. It is intended as a screening instrument for detecting high levels of dissociative experience (see 1.5.2). A number of subscales have been identified in principal components analyses of the DES (e.g., absorption, amnesia, depersonalisation/derealisation). However, a re-analysis of data has suggested that they are a statistical artefact of the data (Waller et al., 1996). A potentially more useful subscale of the DES has recently been identified. The DES-T, identifies a pathologic dissociative taxon within the DES scale (Waller, Putnam & Carlson, 1996, see 1.5.2). It has, as yet, not been subjected to many tests of its psychometric properties.

The DES-II is a 28-item scale and asks participants to report how much of the time they have experiences such as those described. The response is in the form of percentage of time that they have the experience. Percentages of 0 to 100 are represented on a response scale with increments of ten. The overall score for the scale is an average of all 28 items and ranges from 0 - 100, with a higher score indicating a higher level of dissociative experiences.

Initial reports on the psychometric properties of the DES suggested good test retest reliability at 4 weeks, r =.96 (Frischholz, Braun, Sachs, Hopkins, et al., 1990); 4-8 weeks, r =.84 (Bernstein & Putnam, 1986); and 6-8 weeks, r =.79 (Pitblado & Sanders, 1991). Internal reliability was also high with split half of r =.83 (Bernstein & Putnam, 1986); and r =.93 (Pitblado & Sanders, 1991); and a Cronbach's *alpha* of .95 (Frischholz et al, 1990). A later meta-analysis reporting the mean *alpha* reliability of 16 studies using the DES gave a figure of .93 (van Ijzendoorn & Schuengel, 1996). The convergent validity of the DES has also been addressed. Across eight alternative measures of dissociation (including both questionnaire, and interview schedules) the reported combined correlation coefficient was r =.67 (van Ijzendoorn & Schuengel, 1996).

The psychometric properties have been extensively reported in the literature and are impressive. This measure was chosen as the tool with which to test the convergent validity of the newly devised WDS as a result of these qualities. It represents the 'state of the art' in the measurement of dissociation, though it is not underpinned by a strong theoretical conceptualisation.

2.5.3 Child Abuse and Trauma Scale (CATS)

The CATS (see appendix 8) was developed by Sanders & Becker-Lausen (1995). This measure was designed as a quantitative index of the frequency and extent of negative experiences in childhood and adolescence. It addresses the client's present subjective perception of the degree of trauma experienced in childhood. This is based on the concept that the meaning assigned to experience influences the effect it has on the individual (Sanders & Becker-Lausen, 1995).

The CATS is a 38-item measure. Participants respond on a five point Likert-type scale (0 = never, 1 = rarely, 2 = sometimes, 3 = very often, 4 = always). There are 5 items which are reverse scored (see appendix 11 for detailed scoring information) and total and subscale scores are averaged, resulting in scores between 0 and 4. A higher score on this measure indicates a higher level of reported abusive or traumatic experiences in childhood and adolescence.

Many of the available measures of childhood trauma focus on a single type of traumatic experience. However, the evidence suggests different forms of childhood abuse rarely occur in isolation (e.g., Briere & Runtz, 1988b). The CATS has been chosen here as it enables different forms of childhood and adolescent traumatic experiences to be considered within one measure. The authors of the measure designed it to contain questions relating to experience of sexual mistreatment, physical mistreatment and punishment, psychological mistreatment, physical or emotional neglect, and negative home environment (Sanders & Becker-Lausen, 1995). An investigation of the factor structure of this 38-item questionnaire revealed three factors from which three distinct, but inter-correlated (Kent & Waller, 1998; Sanders & Becker-Lausen, 1995) subscales were created;

- Sexual Abuse (6 items)
- Punishment (6 items)
- Neglect/Negative Home Atmosphere (14 items)

Though it did not emerge in the original factor analysis of the CATS, it has been observed that the measure does contain items relating to emotional abuse (Kent & Waller, 1998). Given the importance of investigating emotional abuse within the context of other forms of childhood maltreatment, the CATS has been

extended to include an additional subscale of emotional abuse (Kent & Waller, 1998).

- Emotional Abuse (7 items).

The overall internal consistency of the CATS has been found to be high (Cronbach's *alpha* = *.90,* Kent & Waller, 1998; Sanders & Becker-Lausen, 1995). The four identified subscales have also demonstrated good internal consistency. The negative home environment / neglect subscale has been reported as having an *alpha* coefficient of .86 (Sanders & Becker-Lausen, 1995) and *alpha* = .82 (Kent & Waller, 1998). The sexual abuse scale has an internal consistency of *alpha* = .61 (Kent & Waller, 1998) to *alpha* = .76 (Sanders & Becker-Lausen, 1995), and the punishment scale's *alpha* coefficient was reported as *alpha* = .63 (Sanders & Becker-Lausen, 1995) and *alpha* = .80 (Kent & Waller, 1998). The more recently recognised subscale of emotional abuse had an internal consistency of *alpha* = .88 (Kent & Waller, 1998). Sanders & Becker-Lausen (1995) report the test-retest reliability at 6-8 weeks to be $r = .89$ ($p<.001$) for the overall measure.

Reports of concurrent validity of the CATS have found significant correlations with measures of dissociation ($r = .24$, $p< .001$,Sanders & Becker-Lausen, 1995), and depression ($r = .40$, $p< .001$, Sanders & Becker-Lausen, 1995; $r = .36$, $p< .001$, Kent & Waller, 1998). Scores on the CATS have also been shown to be associated with stressful life events ($r = .29$, $p< .001$, Sanders & Becker-Lausen, 1995) and anxiety ($r = .41$, $p< .001$, Kent & Waller, 1998).

This measure offers good reliability and validity in the measurement of childhood psychological maltreatment. However, it is to be noted that this measure, as with other available measures of childhood trauma, is subject to the limitations of retrospective self-report (see 1.4). Previous studies have suggested that the abuse experiences measured by the four subscales of the CATS are differentially related to various measures of psychopathology (Kent & Waller, 1998). This will be an important variable to consider in the links between childhood trauma, dissociation and psychopathology.

2.5.4 Millon Clinical Multiaxial Inventory-III (MCMI-III)

The MCMI-III (Millon, Millon, & Davis, 1994, see appendix 9) is a measure of personality and it's disorders. The inventory is based on a theory of personality which conceptualises clinical syndromes as disruptions in basic personality styles and personality pathology, which emerge under conditions of stress (Millon, Millon, & Davis, 1994). The 26 subscales within the MCMI-III are aligned with DSM IV axis I and II disorders.

The MCMI-III has 175 items which require a true / false response depending on whether the participant agrees with the statement or feels it describes them. Most items contribute to multiple subscales with different weightings. The measure incorporates validity checks and measures of disclosure, debasement and desirability. Final scores for each of the scales are adjusted and standardised to the base rate of scores within a clinical population (see appendix 11 for more detailed information on scoring). Final scores range between 0 and 115 for each scale. Scores over 75 suggest the presence of the disorder and scores over 85 suggest its prominence.

The subscales fall into four categories which indicate the presence and/or severity of traits and pathology.

- *Clinical Personality Patterns-* Axis II disorders of mild severity. (Schizoid, avoidant, depressive, dependant, histrionic, narcissistic, antisocial, aggressive, compulsive, passive-aggressive, self-defeating)
- *Severe Personality Pathology-* Axis II disorders of moderate and marked severity. (Schizotypal, borderline, paranoid)
- *Clinical Syndromes-* Axis I disorders of moderate severity. (Anxiety, somatoform, bipolar; manic, dysthymia, alcohol dependance, drug dependance, post traumatic stress disorder)
- *Severe Syndromes-* Axis I disorders of marked severity. (Thought disorder, major depression, delusional disorder)
- There are a number of modifying indices, some of which appear as subscales (X, Y, and Z) and others which do not (disclosure, anxiety/depression, denial/compliant).

The MCMI-III identifies a nucleus of attributes which attempt to capture the most relevant and essential characteristics of personality and personality disorders. The transformation of raw scores into base rate adjusted scores also anchors results to the prevalence of a particular characteristic in the psychiatric population. Therefore this is a measure which is only appropriate for use on a clinical population. Given the present study includes a clinical group, it would seem appropriate to use a measure of psychopathology designed for this purpose for this group. However, the MCMI-III will not be used with the non-clinical population. The alternative measure (the SCL-90 Derogatis, 1977) is described below.

In terms of reliability, the MCMI-III reports internal consistency coefficients of between *alpha* = .66 and .90, and coefficients exceed *alpha* = .80 for 20 of the 26 scales (Millon, Millon, & Davis, 1994). Test-retest correlations are also presented for between 5 and 14 days. The mean coefficient is reported as .91, and individual scale correlations ranged from .82 to .96. Available data on the validity of the MCMI-III suggests good concurrent validity. Using seven measures which related to different scales of the MCMI-III (Beck Depression Inventory, General Behaviour Inventory, Michigan Alcohol Screening Test, Impact of Events Scale, State Trait Anxiety Inventory, Symptom Check List-90-R, MMPI-2), acceptable levels of concurrent validity were recorded.

2.5.5 Symptom Checklist-90-R (SCL-90-R)

The SCL-90-R was developed by Derogatis (1977) to assess current psychological symptoms in both clinical and non-clinical populations (see appendix 10).

Each of the 90 items in the measure are rated on a 5 point Likert-type scale indicating how much a problem has distressed the participant within a specified time frame of 7 days (0 = not at all, 1 = as little bit, 2 = moderately, 3 = quite a bit, 4 = extremely). Mean scores for each scale are calculated and can be converted into standardised scores (see appendix 11 for detailed information on scoring). The global indices are calculated from the subscale scores. A higher score indicates a higher level of psychological symptomatology.

There are 9 primary symptom dimensions and three global indices of distress.

- Primary Symptom Dimensions - these are constructs which are clinically significant and well defined in the literature (Derogatis, 1977)
  - Somatisation - Distress arising from perceptions of bodily dysfunction (12 items).
  - Obsessive-Compulsive - Thoughts, impulses and actions that are experienced as unremitting and irresistible that are ego-alien or unwanted in nature (10 items).
  - Interpersonal Sensitivity - Feelings of inadequacy and inferiority, particularly in comparison with other people (9 items).
  - Depression - Manifestations of clinical depression (13 items).
  - Anxiety - General signs of anxiety (10 items).
  - Hostility - Thoughts feelings or actions that are characteristic of the negative affect state of anger (6 items).
  - Phobic Anxiety - Persistent fear response that is irrational and disproportionate to the stimulus and leads to avoidance or escape behaviour (7 items).
  - Paranoid Ideation - Paranoid behaviour as a disordered mode of thinking (6 items).
  - Psychoticism - A graded continuum from mild interpersonal alienation to dramatic psychosis (10 items).
- Global Indices of Distress - These provide an overall assessment of psychopathologic status and are summary indices of levels of symptomatology. Each provides a measure of a different aspect of distress.
  - Global Severity Index (GSI) - Combines information on the number of symptoms reported and intensity of distress.
  - Positive Symptom Distress Index (PSDI) - A measure of response style.
  - Positive Symptom Total (PST) - Indicates the number of symptoms endorsed, regardless of distress level.

The reliability and validity of the SCL-90-R have been reported in a number of studies. Derogatis (1977) reports that they found an internal consistency coefficient of between .77 and .90 for each of the nine subscales. Test retest reliability of between one and ten weeks was also good (between .68 and .90 for the nine subscales, Derogatis, 1977). The construct validity has been investigated (Derogatis, 1977) and was found to be acceptable. Derogatis (1977) also reports studies demonstrating good convergent-discriminant validity of the SCL-90-R when compared to the MMPI. correlations of .40 to .68 were found, indicating acceptable levels of validity. Peveler & Fairburn (1990) also reported good concurrent and predictive validity of the measure, including validation of the global indices.

2.6 DATA ANALYSIS

The first stage of the data analysis concerns the psychometric properties of the WDS. Before using it in the mediational model analysis, the internal consistency will be assessed using Cronbach's *alpha*. Concurrent validity of the WDS will also be investigated by correlating it (Pearson's *r*) with the DES-II, a widely validated measure of dissociation. If the above tests of validity and reliability of the WDS are acceptable it will be used as a measure of dissociation in the testing of the mediational model proposed (see 1.8.3).

The mediation model will be tested using a series of regressions as outlined by Baron & Kenny (1986) and Judd & Kenny (1981). Their guidelines regarding mediational model testing suggest that a series of regression models should be estimated. The dependent variable (MCMI-III) will be regressed on the mediator (WDS) ; the dependent variable (MCMI-III) will be regressed on the independent variable (CATS); and the dependent variable (MCMI-III) will be regressed on both the mediator (WDS) and the independent variable (CATS). In order to establish mediation, these regressions must show the CATS (the measure of trauma) to have an effect on the MCMI-III (the measure of psychopathology) ; and the WDS (the measure of dissociation) to have an effect on the MCMI-III (the measure of psychopathology). Given the results indicate the predicted direction of effect, the effect of the independent variable (CATS) on the

dependant variable (MCMI-III) would need to be less in the third equation (dependant variable regressed on both the mediator and the independent variable), in which the effect of the mediator is removed, than in the second equation (dependant variable regressed on the independent variable) in which it is not.

Chapter 3

RESULTS

3.0 Results

3.1 GROUP CHARACTERISTICS

The mean group scores for measures of trauma (CATS) and dissociation (WDS and DES) are shown in Table 2.

Table 2 - Descriptive Statistics

	Group				
	Clinical sample		Non-clinical sample		
	Mean	(SD)	Mean	(SD)	t-value
CATS Negative environment	1.98	(0.92)	0.74	(0.65)	7.21*
CATS Emotional abuse	2.16	(1.07)	0.88	(0.55)	6.84*
CATS Punishment	2.03	(0.85)	1.08	(0.48)	6.31*
CATS Sexual abuse	0.78	(0.88)	0.04	(0.13)	5.20*
DES Total	23.99	(19.12)	7.91	(5.91)	5.20*
WDS Automatic	1.85	(0.92)	0.85	(0.47)	6.05*
WDS Within-modes	2.01	(0.92)	0.94	(0.44)	6.77*
WDS Between-modes	2.00	(0.99)	0.74	(0.32)	7.44*

* $p < .001$

3.1.1 Trauma measure

In the non-clinical population, the CATS scores on the neglect, sexual abuse and punishment scales were slightly lower, but revealed the same pattern of results as found in both Sanders & Becker-Lausen (1995) and Kent & Waller (1998) (i.e., punishment > neglect > sexual abuse). The mean on the emotional

abuse scale was similar to that found by Kent & Waller (1998). On each of the scales, CATS scores were significantly higher in the clinical population. This is in keeping with previous findings, indicating a higher rate of reported trauma in clinical populations (see 1.8.2.1). A categorical variable of 'any sexual abuse' was also calculated from CATS responses. A higher proportion of participants in the clinical group reported experience of sexual abuse in childhood or adolescence than those in the non-clinical sample (clinical 25/40; 78%: non-clinical 7/49; 22%).

3.1.2 Dissociation measures

The mean DES score of the non-clinical group was below that in previous samples of students / late adolescents (van Ijzendoorn & Schuengel 1996). However, they were within the range of results previously reported for general adult populations (e.g., Carlson & Putnam, 1993). The mean age of participants in the non-clinical sample was 24 years, and therefore might represent a slightly older population than other studies drawing from student populations. The significantly higher score in the clinical group is in keeping with previous research. A range of clinical populations have been shown to have higher DES scores than non-clinical samples (e.g., Carlson & Putnam, 1993; van Ijzendoorn & Schuengel 1996).

As the WDS is a new measure, no comparative data are currently available. However, the clinical group scored significantly higher than the non-clinical group on all three subscales and on the total scale of the WDS.

3.1.3 Psychopathology measures

3.1.3.1 *Non-clinical sample*

The mean scores for the global indices of the SCL-90-R were: Global severity index = 0.50 (SD = 0.40), Positive symptom total = 29.43 (SD =16.52), and the Positive symptom distress index = 1.38 (SD = 0.38). In relation to the adult non-patient norms reported in Derogatis (1977), these scores are a little high. However, the mean age of the comparison sample in that study was 46 years (somewhat older than the present sample, with its mean age of 24 years). Derogatis also reports a sample of non-patient adolescents whose mean scores

were higher than those found in the present study. Therefore, it seems likely that the present sample falls between the non-patient adults' and non-patient adolescents' scores on the SCL-90-R due to their age.

3.1.3.2 *Clinical sample*

The MCMI-III was the measure of symptomatology used in the clinical sample. A score over 75 suggests the presence of a pattern/pathology, and a score of over 85 indicates a prominence of the symptomatology (Millon, Millon, & Davis, 1994). There were four MCMI-III scales on which the participants had a mean score above the first of the cut-off levels. These were depressive, dependant and self-defeating personality patterns, and the clinical syndrome scale of anxiety. A number of other scales approached this cut-off level (e.g., dysthymia, major depression and avoidant personality pattern).Table 3 shows the mean scores on each of the MCMI-III scales.

Table 3 Mean MCMI-III scores (Axis I and Axis II disorders)

AXIS I DISORDERS	MCMI-III score Mean	(SD)
Clinical Syndromes		
Anxiety	77.21	(29.72)
Somatoform	56.28	(24.42)
Bipolar; manic	54.97	(23.02)
Dysthymia	74.77	(28.27)
Alcohol dependance	62.36	(23.64)
Drug dependance	53.69	(30.52)
PTSD	63.97	(20.70)
Severe syndromes		
Thought disorder	65.36	(18.24)
Major depression	71.97	(26.85)
Delusional disorder	48.97	(30.75)

AXIS II DISORDERS	MCMI-III score Mean	(SD)
Clinical personality patterns		
Schizoid	63.67	(23.19)
Avoidant	71.72	(29.07)
Depressive	76.44	(23.10)
Dependant	76.18	(22.33)
Histrionic	30.54	(27.54)
Narcissistic	40.56	(27.47)
Antisocial	56.69	(21.04)
Aggressive (sadistic)	54.77	(21.47)
Compulsive	41.97	(24.34)
Passive-aggressive	63.95	(24.61)
Self-defeating	80.38	(15.14)
Severe personality pathology		
Schizotypal	65.33	(21.14)
Borderline	67.59	(24.61)
Paranoid	66.95	(20.76)

3.2 PSYCHOMETRIC PROPERTIES OF THE MEASURES

3.2.1 Internal consistency of the predictor variable

The internal consistency of the DES was high (Table 4), as has been shown in previous research (Carlson & Putnam, 1993; van Ijzendoorn & Schuengel, 1996). The scales of the WDS also had high internal consistency in both the clinical and non-clinical groups (Table 4). However, the CATS scale had a low Cronbach's alpha for the punishment and sexual abuse scales in the non-clinical sample, although coefficients for both of these scales were acceptable for the clinical sample.

Table 4 - Internal consistency of the WDS, DES and CATS

	Cronbach's alpha	
	Clinical sample	Non-clinical sample
WDS Automatic	.81	.75
WDS within-mode	.83	.73
WDS between-mode	.94	.80
WDS total scale	.96	.87
DES	.96	.86
CATS negative environment	.91	.89
CATS emotional abuse	.94	.79
CATS punishment	.80	.45
CATS sexual abuse	.84	.47

3.2.2 Convergent validity: association of the WDS with the DES

The convergent validity of the three scales of the WDS was investigated using Pearson correlations. The relationship between the two measures of dissociation used in the study are shown in Table 5. The WDS scales showed good convergent validity with the DES, which is the most widely-validated measure of dissociation. The strength of the relationship was lower in the non-clinical population. Concurrent validity is addressed below in the bivariate correlations between measures.

Table 5 - Correlations between measures of dissociation

	DES	
	Clinical	Non-clinical
WDS Automatic	.71**	.38*
WDS Within-modes	.68**	.54**
WDS Between-modes	.86**	.55**
	* p < .005	** p < .001

3.3 HYPOTHESIS 1- BIVARIATE RELATIONSHIPS

In order to test hypothesis one, Pearson's correlations were carried out to test all of the proposed bivariate links in the model. The findings for the clinical and non-clinical groups will be presented separately.

3.3.1 Hypothesis 1a - Retrospective self-reported levels of trauma will be positively related to self-reported levels of dissociative experiences.

3.3.1.1 *Non-clinical group*

The correlations between the measure of trauma (CATS) and both measures of dissociation (WDS and DES) for the non-clinical sample are shown in Table 6. There was only one weak correlation at the $p < .05$ level (between the DES and the CATS neglect scale). As discussed in 1.8.1, a number of relationships must be present in order for a mediational analysis to be carried out (Baron and Kenny, 1986). One of these criteria is that the independent variable (in this case, retrospective self-reports of childhood trauma) be related to the mediator (in this case, self-reported levels of dissociative experiences). As the hypothesised relationship between these independent variables and mediating variables has not been shown here, the non-clinical group cannot be considered further in the mediational analysis.

Table 6 - Relationship between self-report measures of trauma and dissociation in the non-clinical sample

	CATS scales			
	Emotional	Neglect	Punishment	Sexual
DES	.14	.25*	.20	-.04
WDS Automatic	.09	.18	.23	.13
WDS Within-mode	.08	.08	.16	.02
WDS Between-mode	.23	.17	.10	.22

* = p< 0.05

3.3.1.2 *Clinical group*

The correlations between the measure of trauma (CATS) and both measures of dissociation (WDS and DES) for the clinical sample are shown in Table 7. There were eight correlations that were significant at the $p < .05$ level. These showed that the DES score was significantly related to the emotional abuse, neglect and sexual abuse scales of the CATS. The WDS Within-modes scale also correlated significantly with emotional abuse, neglect and sexual abuse measures. The WDS Between-modes scale was significantly related to emotional abuse and neglect scales. There were no significant correlations with the CATS punishment scale or the WDS Automatic (level 1) scale. Therefore, these two scales will not be used in further analyses.

Table 7 - Relationship between self-report measures of trauma and dissociation in the clinical sample

	CATS scales			
	Emotional	Neglect	Punishment	Sexual
DES	.39*	.43*	.14	.35*
WDS Automatic	.20	.24	-.06	.16
WDS Within-modes	.30*	.33*	.08	.27*
WDS Between-modes	.44*	.45*	.14	.18

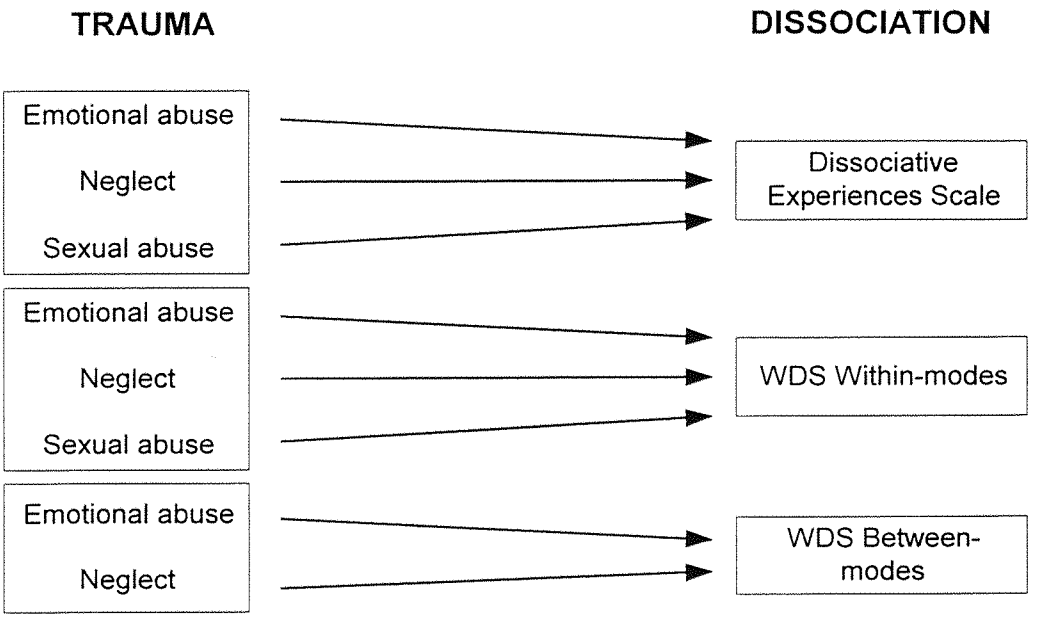
* $p < .05$

3.3.1.3 *Summary of the relationship found between trauma and dissociation*

In summary, the bivariate relationships between measures of trauma and dissociation have been investigated in both the clinical and non-clinical samples. The correlations were, on the whole, non-significant in the non-clinical group. Therefore this group will not be investigated further in terms of the mediational model. However, the measures of trauma were related to measures of dissociation in the clinical group. These relationships will be further investigated.

The investigation of these correlational relationships is the first stage in assessing which variables can be further investigated in a regression analysis of the proposed model. Those bivariate relationships that showed a significant correlation in Table 7 can be inserted into the model (see Figure 5). Those variables which showed no significant relationship to each other are not included. In particular, there were no significant relationships between: the CATS sexual abuse scale and WDS Within-modes scale; the CATS Punishment scale and any other variable; or the WDS Automatic scale and any other variable. Further correlations/regression analyses will elaborate the model to allow us to consider trauma, dissociation and psychopathology. However, this part of the process (investigating basic links in the model) leaves us with a clear picture of the trauma variables that are correlated with dissociation variables.

Figure 5 - Measures of trauma and dissociation that are associated in the clinical group.



3.3.2 Hypothesis 1b - Self-reported levels of dissociative experiences will be positively related to self-reported levels of presenting psychological symptomatology.

The correlations between the measures of dissociation (DES and WDS) and psychological symptomatology (MCMI-III) are shown in Table 8. As the non-clinical sample will no longer be considered in the mediational analysis (see section 3.3.1.1), only the results for the clinical sample are shown.

Table 8 shows a number of significant correlations between measures of dissociation and both axis I and axis II disorders. Many of the pathology measures are predicted by both dissociation scales. However, the correlation coefficients are higher for the WDS in every case. The axis I disorder of anxiety is predicted by the WDS, but not by the DES. Similarly the WDS is a better predictor than the DES of Axis II clinical personality patterns. One or more of the WDS scales predicts schizoid, avoidant, depressive, dependant, histrionic, antisocial, and aggressive clinical personality patterns. The DES predicts none of these patterns. Neither dissociation scale can predict self-defeating and narcissistic personality patterns. Finally, both are predictors of the compulsive and passive-aggressive patterns. Table 8 also shows a pattern of negative correlation between the

measures of dissociation and the personality pathology histrionic, narcissistic and compulsive scales. In the case of the histrionic and compulsive scales, these negative correlations were significant.

When we consider the severe pathology scales of the MCMI-III (Axis I - severe syndromes; thought disorder, major depression, delusional disorder and Axis II - severe personality pathology; schizotypal, borderline, paranoid), both measures of dissociation show a strong pattern of correlation. The DES and WDS are related to each of these severe pathologies. However, the WDS scales allow us to observe that automatic dissociation is not a predictor of delusional disorder, though the WDS within-mode and between-mode scales are good predictors. Table 8 also shows no significant relationship between borderline pathology and within-mode dissociation, although automatic and between-mode dissociation are significantly related.

The additional information gained using the scale structure of the WDS is also evident in the case of less severe pathology. For example, the DES predicts compulsive personality pattern (see Table 8). In contrast, the WDS identifies that the relationship is not evident at the automatic or within-modes level of dissociation, but it is present at only the between-modes level. The WDS automatic and within-mode scales predict anxiety. However, the between-modes scale is not related to anxiety. Others, such as the somatoform scale, are predicted by all three of the WDS scales.

Table 8 Relationship between measures of dissociation and symptomatology (Axis I and Axis II disorders)

AXIS I DISORDERS	**DES**	**WDS** Automatic	Within	Between
Clinical Syndromes				
Anxiety	.37	.48**	.52**	.32
Somatoform	.45*	.48**	.61**	.42*
Bipolar; manic	.40*	.25	.24	.47*
Dysthymia	.37	.52**	.48**	.38
Alcohol dependance	.40*	.31	.33	.52**
Drug dependance	.38*	.14	.24	.40*
PTSD	.43*	.57**	.60**	.46*
Severe syndromes				
Thought disorder	.54**	.54**	.60**	.59**
Major depression	.46**	.59**	.52**	.50**
Delusional disorder	.43*	.30	.45*	.62**

* p< 0.01 ** p < 0.001

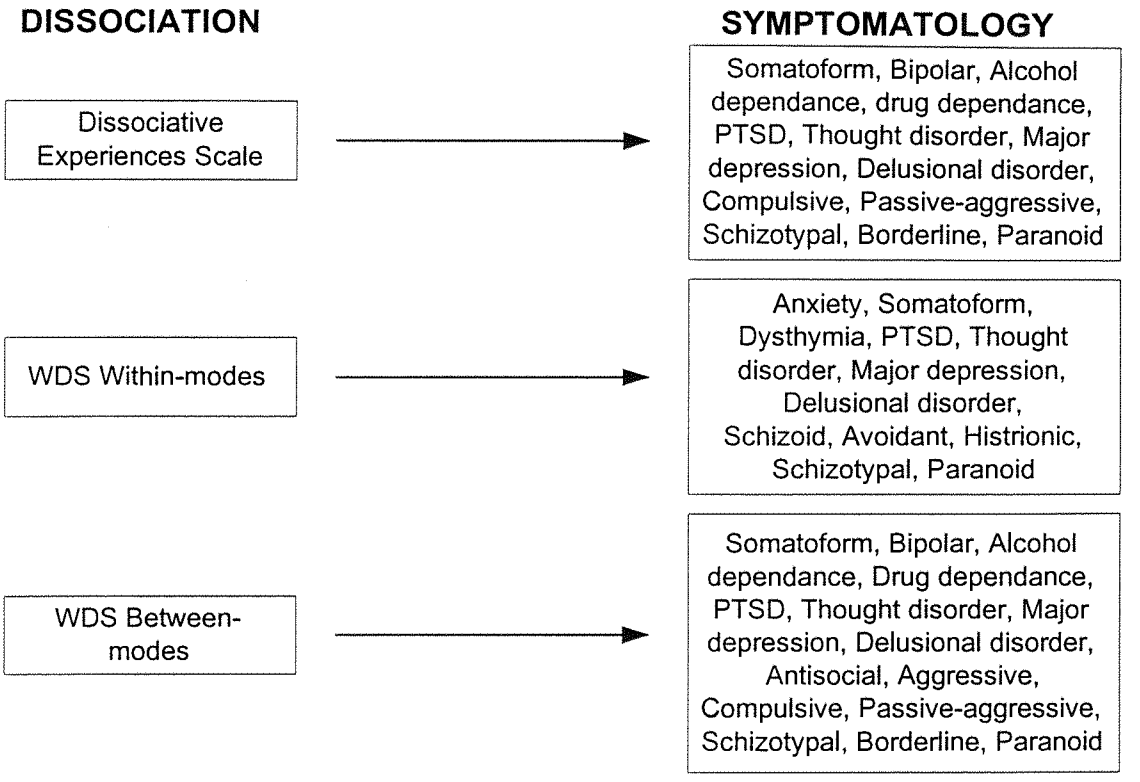
AXIS II DISORDERS	**DES**	**WDS** Automatic	Within	Between
Clinical personality patterns				
Schizoid	.25	.36	.52**	.28
Avoidant	.21	.35	.38*	.28
Depressive	.20	.44*	.31	.24
Dependant	.34	.45*	.30	.26
Histrionic	-.27	-.45*	-.57**	-.32
Narcissistic	-.14	-.29	-.36	-.10
Antisocial	.34	.17	.16	.40*
Aggressive (sadistic)	.32	.22	.24	.52**
Compulsive	-.58**	-.33	-.34	-.64**
Passive-aggressive	.38*	.46*	.26	.46*
Self-defeating	.24	.28	.27	.32
Severe personality pathology				
Schizotypal	.57**	.57**	.60**	.61**
Borderline	.50**	.57**	.36	.58**
Paranoid	.61**	.51**	.49**	.71**

3.3.2.1 *Summary of the relationship found between dissociation and symptomatology*

Bivariate relationships have been shown between the measures of dissociation and symptomatology. These relationships were particularly evident in the severe pathologies. The WDS scales were a better predictor of the full range of symptomatology (measured by the MCMI-III). Individual patterns of the contribution of the different levels of dissociation (measured by the WDS) were also evident for different pathologies. Although the DES identified many of the same axis I and some of the axis II pathology, the WDS provided more detailed information as to which symptomatology was related to which forms of dissociation.

The significant bivariate relationships reported in Table 8 will be further investigated in the proposed mediational model. Figure 6 shows the second stage of defining the model for mediational analysis. Significant relationships between dissociation and symptomatology can be inserted into the model. Those variables that showed no significant relationship to each other are not included. We now have clear pictures of the trauma variables that are correlated with dissociation variables (Figure 5) and of the dissociation variables that are correlated with symptomatology (Figure 6).

Figure 6 - Measures of dissociation and symptomatology which correlate in the clinical group



3.3.3 Hypothesis 1c - Retrospective self-reported levels of trauma will be positively related to self-reported levels of presenting psychological symptomatology.

The correlation between the measures of trauma (CATS) and symptomatology (MCMI-III) are shown in Table 9. One correlation was significant at the $p < 0.01$ level. There were no relationships between pathology and the punishment and the neglect scales or the dimensional variable of sexual abuse.

The sexual abuse variable was more appropriately treated as a categorical variable. The report of 'any experience of sexual abuse' was related to symptomatology. Experience of sexual abuse was significantly related to drug dependance ($t = 1.95$, df = 37, $p < 0.03$, 1-tailed); thought disorder ($t = 1.87$, df = 37, $p < 0.04$, 1-tailed); and the relationship with schizotypal personality approached significance ($t = 1.47$, df = 37, $p = .075$, 1-tailed). This variable was also negatively related to compulsive patterns ($t = 2.47$, df = 37, $p = 0.02$, 2-tailed).

Table 9 Relationship between measures of trauma and symptomatology (Axis I and Axis II disorders)

AXIS I DISORDERS	CATS Emotional	Neglect	Punishment	Sexual
Clinical Syndromes				
Anxiety	.01	-.04	-.17	.04
Somatoform	.01	-.04	-.02	.06
Bipolar; manic	.35	.20	.13	.09
Dysthymia	.09	-.06	-.02	-.09
Alcohol dependance	.17	.18	.02	.06
Drug dependance	.23	.34	.10	.21
PTSD	.17	.21	-.10	.17
Severe syndromes				
Thought disorder	.13	-.00	-.21	.17
Major depression	.20	.04	.08	-.01
Delusional disorder	.18	.13	.01	.01

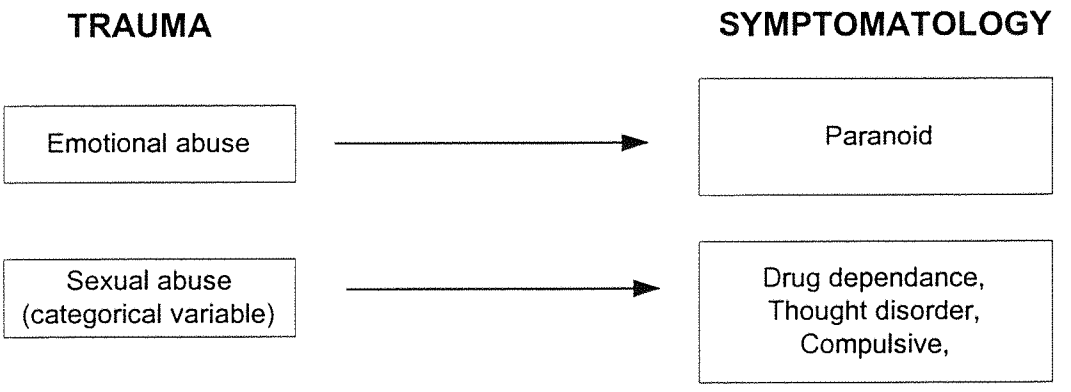
* p< 0.01 ** p< 0.001

AXIS II DISORDERS	CATS Emotional	Neglect	Punishment Sexual
Clinical personality patterns			
Schizoid	.05	.04	.05-.01
Avoidant	.06	-.04	-.01-.04
Depressive	.10	.01	-.10-.14
Dependant	-.04	-.20	-.14-.14
Histrionic	-.18	-.17	-.12-.15
Narcissistic	-.05	.06	-.09.04
Antisocial	.21	.32	.10.14
Aggressive (sadistic)	.26	.24	.06-.00
Compulsive	-.35	-.33	-.11-.21
Passive-aggressive	.13	.03	-.10-.14
Self-defeating	.08	-.07	-.00-.23
Severe personality pathology			
Schizotypal	.25	.14	.01.07
Borderline	.30	.18	.02-.03
Paranoid	.43*	.35	.16-.01

3.3.3.1 *Summary of the relationship found between trauma and symptomatology*

In summary, reports of emotional abuse, neglect and a categorical measure of sexual abuse were predictors of some of the pathology measures. Figure 7 summarises the third stage of assessing which variables can be investigated in the regression analysis - the relationships between trauma and symptomatology measures. Those variables which are included here were significantly correlated in Table 9 and in the t-tests investigating the categorical sexual abuse variable.

Figure 7 - Measures of trauma and symptomatology which correlate in the clinical group



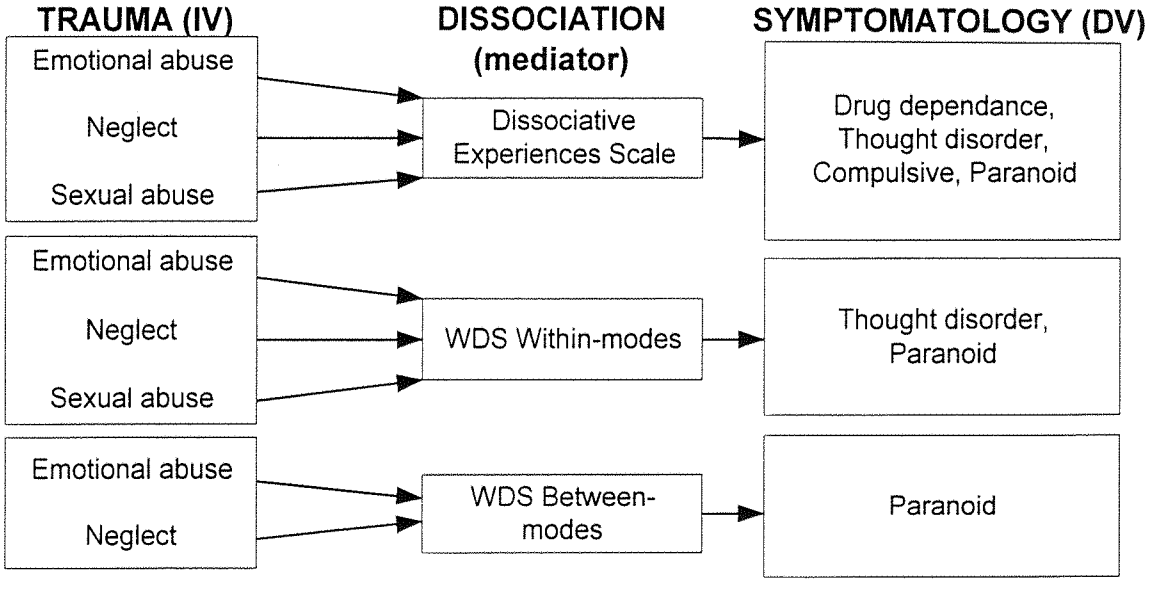
3.3.4 Summary of bivariate associations

Figures 5 - 7 outline the associative information needed in order to specify the variables for testing the proposed mediational model. For the model to be tested, it first needed to be shown that the independent variables (IVs) were related to the mediators. The IVs and mediators fulfilling this criteria are shown in Figure 5. Second, the mediators also had to be related to the dependant variables (DVs). The related DVs and mediators are shown in Figure 6. Finally, the IV's needed to be related to the DVs. The IVs and DVs which are significantly related are shown in Figure 7.

This relevant information on bivariate relationships needs to be integrated into a model including the IVs (trauma), the mediators (dissociation) and the DVs

(symptomatology). Figure 8 represents the integration of Figures 5 - 7. Only those variables that have significant bivariate relationships to each of the other variables in the path are included.

Figure 8 - Model of related variables to be used in mediational analysis



3.4 HYPOTHESIS 2 - DISSOCIATION AS A MEDIATOR IN THE LINK BETWEEN TRAUMA AND SYMPTOMATOLOGY

Testing mediational effects (Baron & Kenny,1986) requires calculation of a series of regression models for each DV appearing in Figure 8. Three regression equations are required: a) regress the DV on the IV; b) regress the DV on the mediator; and c) regress the DV on the mediator and the IV. If the first of these stages (a) is non-significant, the relationship is not considered any further. Axis I disorders will be considered first, followed by axis II disorders.

3.4.1 Axis I disorders

The axis I disorders that are to be tested in the mediational analysis are those appearing in Figure 8 (drug dependance and thought disorder).

3.4.1.1 *Testing mediational effects of dissociation (DES) in the relationship between trauma and drug dependance*

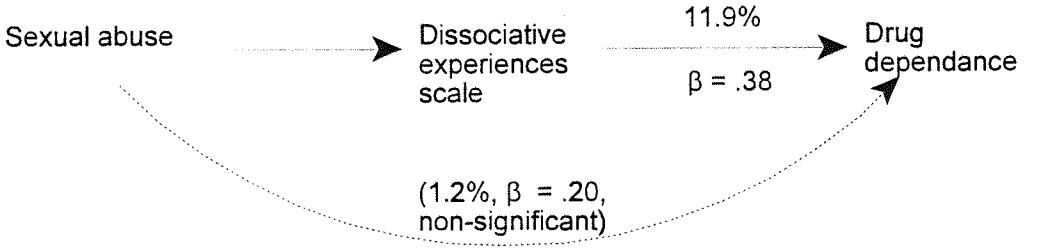
The first stage was to regress the MCMI-III drug dependance scale (DV) on

the CATS sexual abuse categorical variable (IV). The categorical variable of sexual abuse accounted for 6.8% (adjusted R square = .068) of the variance in drug dependance symptomatology ($F = 3.79$, $df = 1$, $p < 0.03$, 1-tailed).

The MCMI-III drug dependance scale (DV) is then regressed on the DES (mediator). The DES accounted for 11.9% of the variance in the drug dependance variable ($F = 6.138$, $df = 1$, $t = 2.48$, $p < 0.01$, 1-tailed).

The final stage in assessing the DES as a mediator is to regress MCMI-III drug dependance scale (DV) on both DES dissociation (mediator) and sexual abuse (IV). Together, DES and sexual abuse and accounted for 13.1% of the variance in drug dependance ($F = 3.86$, $df = 2$, $p < 0.02$). However, removing the effect of the DES meant that the effect of sexual abuse was no longer significant ($t = 1.23$, $p = 0.11$, 1-tailed). Therefore, DES can be seen as a mediator of the relationship between sexual abuse and drug dependance (see Figure 9).

Figure 9 - The mediating role of dissociation (DES) in the relationship between sexual abuse and drug dependance



3.4.1.2 *Testing mediational effects of dissociation (DES and WDS) in the relationship between trauma and thought disorder*

The first stage was to regress the MCMI-III thought disorder scale (DV) on the CATS sexual abuse categorical variable (IV). Sexual abuse accounted for 6.2% (adjusted R square = .062) of the variance in thought disorder symptomatology ($F = 3.50$, $df = 1$, $\beta = .294$, $t = 1.871$, $p < 0.04$, 1-tailed).

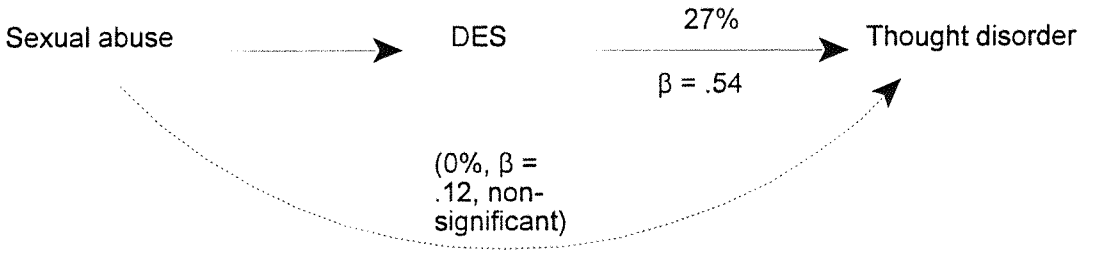
Both the DES and within-mode dissociation are possible mediators for the relationship between experience of sexual abuse and thought disorder. Therefore, both will be considered separately. The following second and third stages will be reported first for DES, then the WDS within-mode scale.

The MCMI-III thought disorder variable (DV) was regressed on the DES

(mediator). The DES accounted for 27% of the variance in the thought disorder variable ($F = 15.03$, $df = 1$, $t = 3.88$, $p < .001$, 1-tailed).

The final stage in assessing the DES as a mediator is to regress MCMI-III thought disorder scale (DV) on both DES dissociation (mediator) and sexual abuse (IV). Together, the DES and sexual abuse and accounted for 26.3% of the variance in thought disorder ($F = 7.79$, $df = 2$, $p = .001$, 1-tailed). However removing the effect of the DES meant that the effect of sexual abuse was no longer significant ($t = .82$, $p = .21$, 1-tailed). Therefore, DES can be seen as a mediator of the relationship between sexual abuse and thought disorder (see Figure 10).

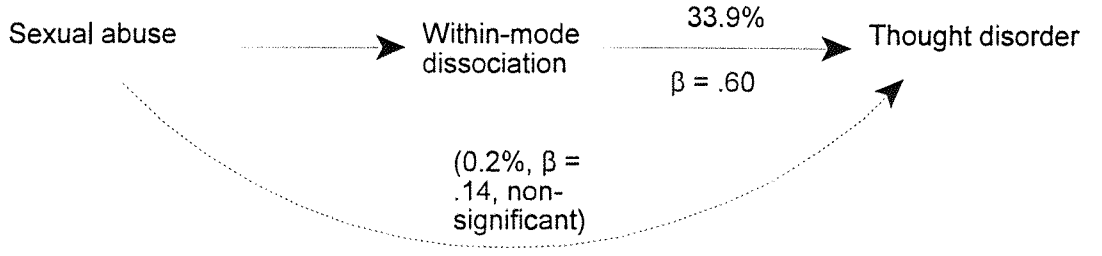
Figure 10 - The mediating role of dissociation (DES) in the relationship between sexual abuse and thought disorder



The same mediational analysis was carried out for the within-mode dissociation. The MCMI-III thought disorder (DV) was regressed on the WDS Within-mode dissociation (mediator). The within-mode variable accounted for 33.9% of the variance in the thought disorder variable ($F = 20.53$, $df = 1$, $t = 4.53$, $p < .001$, 1-tailed).

The final stage in assessing WDS within-mode dissociation as a mediator is to regress MCMI-III thought disorder (DV) on both Within-mode dissociation (mediator) and sexual abuse (IV). Together, Within-mode and sexual abuse accounted for 34.1% of the variance in thought disorder ($F = 10.81$, $df = 2$, $p < .001$). Removing the effect of the within-mode dissociation meant that the effect of sexual abuse was non-significant ($t = 1.03$, $p = .16$, 1-tailed). Therefore within-mode dissociation can be seen as a mediator of the relationship between sexual abuse and thought disorder (see Figure 11).

Figure 11 - The mediating role of dissociation (WDS within-mode) in the relationship between sexual abuse and thought disorder



3.4.2 Axis II disorders

The axis II disorders that are to be tested in the mediational analysis are those appearing in Figure 8 (compulsive and paranoid personality pathology).

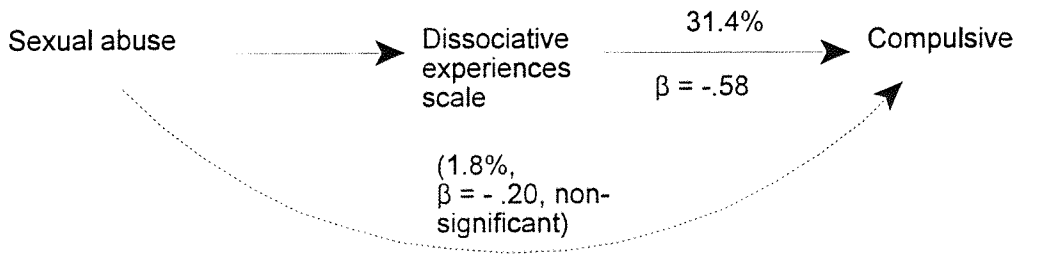
3.4.2.1 *Testing mediational effects of dissociation (DES) in the relationship between trauma and compulsive personality pattern*

The first stage was to regress the MCMI-III compulsive scale (DV) on the CATS sexual abuse categorical variable (IV). Sexual abuse accounted for 11.9% (adjusted R square = .0.119) of the variance in compulsive symptomatology (β = -.38, t = 2.47, F = 6.12, df = 1, $p < 0.01$, 1-tailed).

The MCMI-III compulsive personality pattern scale (DV) was regressed on the DES (mediator). The DES accounted for 31.4% of the variance in the compulsive variable (F = 18.36, df = 1, t = 4.285, $p < .001$, 2-tailed).

The final stage in assessing the DES as a mediator is to regress MCMI-III compulsive (DV) on both DES dissociation (mediator) and sexual abuse (IV). Together, DES and sexual abuse and accounted for 33.2% of the variance in compulsive personality scores (F = 10.45, df = 2, $p < .001$). However, removing the effect of the DES meant that the effect of sexual abuse is no longer significant (t = 1.42, p = .08, 1-tailed). Therefore, the DES can be seen as a mediator of the relationship between sexual abuse and compulsive personality pathology (see Figure 12).

Figure 12 - The mediating role of dissociation (DES) in the relationship between sexual abuse and compulsive personality pattern



3.4.1.3 *Testing mediational effects of dissociation (DES and WDS) in the relationship between trauma and paranoid personality pathology*

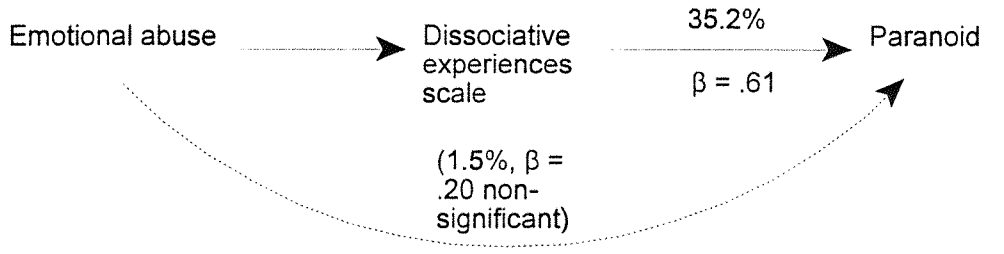
The first stage was to regress the MCMI-III paranoid personality pathology variable (DV) on the CATS emotional abuse variable (IV). Emotional abuse accounted for 15.8% (adjusted R square = .158) of the variance in paranoid personality pathology (β = .425, t = 2.85, F = 8.15, df = 1, $p < .004$, 1-tailed).

There were three possible mediators to be tested in this relationship, the DES, within-mode and between-mode dissociation. Therefore all will be considered, DES alone and WDS scales together. The following second and third stages will be reported first for DES then the WDS scales.

The MCMI-III paranoid personality pathology variable (DV) was regressed on the DES (mediator). The DES accounted for 35.2% of the variance in the paranoid variable (F = 21.61, df = 1, t = 4.65, $p < 0.001$, 1-tailed).

The final stage in assessing the DES as a mediator is to regress MCMI-III paranoid (DV) on both DES dissociation (mediator) and emotional abuse (IV). Together, DES and emotional abuse and accounted for 36.7% of the variance in paranoid disorder (F = 11.99, df = 2, $p < 0.001$). However, when the effect of the DES is removed, the effect of emotional abuse is no longer significant (t = 1.37, p = .09, 1-tailed). Therefore, DES can be seen as a mediator of the relationship between sexual abuse and paranoid disorder (see Figure 13).

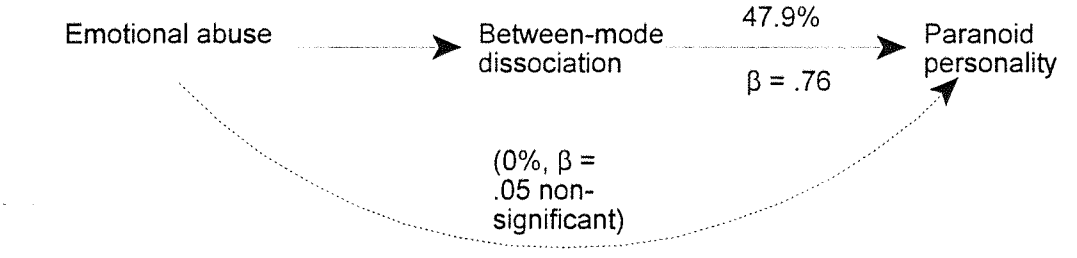
Figure 13 - The mediating role of dissociation (DES) in the relationship between emotional abuse and paranoid personality pathology



The same mediational analysis was carried out for the WDS scales. Here the MCMI-III paranoid scale (DV) was regressed simultaneously on the WDS within-mode and between-mode dissociation measures (mediators). The WDS variables accounted for 47.9% of the variance in the paranoid variable ($F = 17.07$, $df = 2$, $p < .001$, 1-tailed). When the mediating variables were considered individually, between-mode dissociation had a significant effect ($\beta = .76$, $t = 3.83$, $p < .001$, 1-tailed). However, within-mode variable did not have a significant independent effect ($\beta = -.06$, $t = .29$, $p = .77$, 2-tailed).

The final stage in assessing between- and within-mode dissociation as mediators is to regress the MCMI-III paranoid personality variable (DV) on the WDS variables (mediators) and emotional abuse (IV). Together, the WDS dissociation variables and emotional abuse accounted for 46.5% of the variance in paranoid ($F = 11.12$, $df = 3$, $p < .001$). However, removing the effect of the WDS within- and between-mode scales meant that the effect of emotional abuse was no longer significant ($\beta = .05$, $t = .36$, $p = .36$, 1-tailed). Therefore, WDS between-mode dissociation can be seen as a mediator of the relationship between emotional abuse and paranoid personality pathology (see Figure 14).

Figure 14 - The mediating role of dissociation (WDS between-mode) in the relationship between emotional abuse and paranoid personality pathology



3.5 HYPOTHESIS 3 - THE THREE WDS LEVELS OF DISSOCIATION: IDENTIFICATION AND HIERARCHY

The cognitive-behavioural conceptualisation on which the WDS is based (see 1.7.3) makes predictions regarding the presence of three distinguishable forms of dissociation, and the hierarchical nature of these identified levels. The results reported in Tables 7 and 8 show the relationships between these three scales (representing different forms of dissociation) and trauma and pathology variables. As can be seen from Table 7, the automatic level of dissociation has a different relationship with trauma measures than the other two WDS scales. This is identifiable by the absence of any significant correlations with trauma measures. Table 8 also demonstrates the differential relationships of the three forms of dissociation with a range of pathology measures. Some symptom profiles are related to all WDS scales (e.g., PTSD). Other symptomatology measures correlate significantly with one (e.g., drug dependance) or two (e.g., borderline personality pathology) of the WDS scales in various combinations. The strength of the correlations with each MCMI-III scale is also varied across WDS scales. These results suggest that the three scales are identifying aspects of dissociation, which are differentiated in their relationships to relevant variables.

However, the hypothesised hierarchical nature of the three WDS scales is not shown here. Tables 7 and 8 both show examples of significant relationships involving within-mode, or within-mode and between-mode dissociation in the absence of such a relationship with automatic dissociation.

Chapter 4

DISCUSSION

4.0 DISCUSSION

The central aims of this study were to investigate the role of dissociation in the relationship between trauma and psychopathology, and to test the predictions of a cognitive-behavioural model of dissociation by studying the properties of a measure based on this theoretical model. Each of the hypotheses outlined in 1.10 was tested, and the findings are discussed individually below. A number of previously observed relationships have been replicated. The results also suggest a role for dissociation in the relationship between experiences of childhood trauma and specific symptomatology. However, there are many potential qualifying factors discussed here which require further investigation and replication before firm conclusions can be drawn from these data. The cognitive-behavioural model of dissociation (and the measure derived from it) was also found to have clinical utility, identifying different levels of dissociation.

4.1 REPLICATING BIVARIATE LINKS BETWEEN TRAUMA, DISSOCIATION AND SYMPTOMATOLOGY

The testing of bivariate links between measures of trauma, dissociation and symptomatology addressed the first hypothesis. This was a replication and extension of previous findings (see 1.8.2), investigating the correlational relationships between the relevant variables in order to specify the mediational model to be tested in hypothesis two. There were three bivariate relationships to be explored (trauma and dissociation, dissociation and psychopathology, and trauma and psychopathology).

4.1.1 Bivariate relationships in the non-clinical group

The non-clinical sample showed only one weak (but significant) relationship in correlations between the dissociation and trauma measures. Previous non-clinical samples have reported a significant relationship between retrospective self-reports of trauma and self-reported dissociative experiences (Becker-Lausen et al.,1995, Sanders & Becker-Lausen,1995). This seemingly contradictory finding was considered in the light of the non-clinical sample's correlations of the DES and CATS presented by Sanders and Becker-Lausen (1995). The significant correlation found here between the DES and the neglect scale of the CATS ($r = .25$) was of a similar magnitude to that found in the previous study ($r = .29$). The

non-significant correlation between the punishment scale of the CATS and the DES found in the present study (r = .20) was similar to the weak (but significant) correlation found by Sanders and Becker-Lausen (r = .24). However, the results of the punishment scale for the non-clinical sample in the present study must be viewed with some caution, as the internal consistency of the punishment scale for this population was weak (*alpha* = .45). The sexual abuse scale also had low internal consistency (*alpha* = .47), and a very much lower mean sexual abuse score was found (.04 compared to in the .11 previous study). There are a number of differences between these two sets of results particularly in the numbers of participants and in the mean scale scores. The study by Sanders & Becker-Lausen (1995) had 228 subjects (compared to 49 in the present study) and overall higher mean scores on the CATS. These differences may account for the failure to replicate previous significant findings. The data obtained from the clinical sample did not have these particular problems. Therefore, all further analysis was carried out on the scores of the clinical group.

4.1.2 Bivariate relationships in the clinical group

4.1.2.1 *The relationship between measures of childhood trauma and dissociation*

Trauma has been found to be associated with dissociation in many diverse clinical samples (e.g., Chu & Dill, 1990; Ross-Gower et al., 1998; Sanders & Giolas, 1991; Waldinger et al., 1994). Results of this bivariate analysis in the clinical sample showed the hypothesised relationships between both measures of dissociation and with retrospective reports of childhood trauma (replicating previous results). The pattern of significant relationships found between childhood trauma reports and the measures of dissociation is summarised in Table 10.

An investigation of these relationships allows us to compare aspects of dissociation measured by the subscales of the new measure (WDS), with the relationship between trauma (measured by the CATS) and the existing measure (DES). The results shown in Table 10 suggest that WDS within-mode dissociation identifies a similar pattern of dissociation to the DES in relation to self-reported trauma history. Though the between-mode scale is related to the trauma measure, it seems that the within-mode scale is most consistently related to self-reported trauma history.

Table 10 Significant relationships between the trauma and dissociation variables.

	DES	WDS Automatic	WDS Within-mode	WDS Between-mode
Emotional	✓	-	✓	✓
Neglect	✓	-	✓	✓
Punishment	-	-	-	-
Sexual	✓	-	✓	-

These results demonstrate the richer information that the WDS can provide when compared to the global DES dissociation measure. With no theoretical base on which to draw, the aspects of dissociation that the DES measures have been difficult to determine. Factor analysis of the DES has not revealed a reliable factor structure within the measure, and it has been suggested that the DES does measure some normal aspects of dissociation (Waller et al., 1996). Within the theoretical structure of the WDS, automatic dissociation is the lowest level, incurring the least functional cost to the individual. The symptomatology associated with it is also somewhat less severely pathological (Kennedy & Waller, under consideration). These findings may suggest that this type of dissociation hypothesised by the cognitive-behavioural model (occurring at a preconscious processing level) may not result from childhood traumatic experience. However, the nature of the methodological difficulties in retrospectively measuring childhood trauma in an adult sample needs to be bourne in mind when interpreting this finding (see 1.4).

The absence of a significant relationship between the punishment subscale of the CATS and any measure of dissociation is in keeping with previous research. Irwin (1994) also found that a measure of physical abuse was not related to dissociation, though sexual abuse and family loss were. The significant relationship reported between dissociation and the CTQ physical-emotional abuse scale (Rosen & Martin, 1996) can also be evaluated in light of the results found here, suggesting a relationship between reports of emotional abuse and dissociation (but not between physical abuse/punishment and dissociation).

However, when considering the questions which make up the punishment scale of the CATS, only one question (question 34, see appendix 8) explicitly refers to physical abuse rather than punishment. Therefore, in the context of previous research (which looks at physical abuse rather than physical abuse and punishment), the results of this present study do not provide a direct comparison. This raises questions concerning the use of the CATS as a measure of trauma, especially as a measure of physical abuse. The use of a measure particularly addressing physical abuse may have provided more detailed information. However, the CATS was chosen with particular reference to its ability to address multiple forms of abuse simultaneously which was considered important here (see 2.5.3). Although other forms of measurement would have provided more depth of information in the case of physical, and other forms of abuse (e.g., interview methodology), the CATS was chosen for breath of information on experiences of childhood abuse. Previous research, and indeed these results suggest different forms of childhood maltreatment to be relevant.

Finally, the third level (WDS between-modes dissociation) was found not to be significantly related to the sexual abuse scale of the CATS, though this form of dissociation was correlated with both the neglect and emotional abuse scales. This result suggests that previously observed relationships between sexual abuse and dissociation (see 1.8.2.2) may have been the result of the correlation of sexual abuse measures with within-mode dissociation, rather than with all dissociation levels. The between-modes level of dissociation is theoretically related to the more severe dissociative symptoms, which are associated with dissociative identity disorder/multiple personality disorder (e.g, multiple/alter personalities, amnesia). Many studies have linked multiple personality disorder to a history of sexual abuse. However, these results suggest that there may not be a direct link between retrospective self-reported sexual abuse and the behavioural manifestations of between-mode dissociation. If the cognitive-behavioural conceptualisation is valid, the observed relationship in the previous literature may have resulted from the experience of multiple forms of abuse, resulting in a spurious link between sexual abuse and multiple personality symptomatology. However, this conclusion is tentative and requires replication as the sample size here is small and the CATS, in measuring multiple forms of abuse, does not provide detailed data on each individually.

To summarise the relationship between the variables of childhood trauma and dissociation, the data showed that the within-mode scale of the WDS was most consistently linked with retrospective self-report of childhood trauma (though the between-modes scale is also related to trauma). This within-mode scale seems to be measuring similar 'trauma-related dissociation' to that assessed by the DES. The findings relating to this bivariate relationship are generally consistent with (and build upon) previous findings. However the deconstruction of dissociation raises interesting questions to be investigated further.

4.1.2.2 *The relationship between dissociation and psychopathology*

Significant relationships were found between measures of dissociation and psychopathology. As has been demonstrated in many previous studies (see Carlson & Putnam, 1993; van Ijzendoorn & Schuengel, 1996) the DES was related to a number of clinical syndromes, severe clinical syndromes and personality disorder scales. The new measure (the WDS) was correlated with all of the MCMI-III pathology scales that were related to the DES, and with a number of additional MCMI-III scales. The pattern of significant relationships found between dissociation and axis I symptomatology measures are summarised in Table 11.

Table 11 Significant relationships between dissociation and Axis I symptomatology variables.

	DES	WDS Automatic	WDS Within-mode	WDS Between-mode
Clinical Syndromes				
Anxiety	-	✓	✓	-
Somatoform	✓	✓	✓	✓
Bipolar	✓	-	-	✓
Dysthymia	-	✓	✓	-
Alcohol dependance	✓	-	-	✓
Drug dependance	✓	-	-	✓
PTSD	✓	✓	✓	✓
Severe Clinical Syndromes				
Thought Disorder	✓	✓	✓	✓
Major depression	✓	✓	✓	✓
Delusional disorder	✓	-	✓	✓

In the relationship between dissociation and axis I symptomatology, Table 11 shows a similarity in the pattern of association of the DES and between-mode scale of the WDS. This suggests that in terms of a relationship with axis I disorders, the DES and the between-mode level of the WDS may be measuring similar forms of dissociation. This is in contrast to the pattern observed in the relationship of trauma to dissociation, in which the DES was tapping in to the within-mode form of dissociation. This summary also demonstrates a similarity in the patterns of linkage for the automatic and within-mode forms of dissociation in their relationship with symptomatology. A summary of the relationship of dissociation measures to axis II pathology is shown in Table 12.

Table 12 Significant relationships between dissociation and Axis II symptomatology variables.

		WDS		
	DES	Automatic	Within-mode	Between-mode
Clinical personality patterns				
Schizoid	-	-	✓	-
Avoidant	-	-	✓	-
Depressive	-	✓	-	-
Dependant	-	✓	-	-
Histrionic	-	✓	✓	-
Narcissistic	-	-	-	-
Antisocial	-	-	-	✓
Aggressive	-	-	-	✓
Compulsive	✓	-	-	✓
Passive-aggressive	✓	✓	-	✓
Self-defeating	-	-	-	-
Severe personality pathology				
Schizotypal	✓	✓	✓	✓
Borderline	✓	✓	-	✓
Paranoid	✓	✓	✓	✓

The pattern of association shown in Table 12 is somewhat different. Each of the scales of the WDS was correlated with different symptomatology. Most notably, between-mode dissociation had a different patten of association with the mild personality pathology scales compared with the other WDS scales. As with the relationship shown for axis I disorders, between-mode dissociation most closely paralleled the pattern of association shown with the DES.

Tables 11 and 12 also show that the WDS was related to more measures of pathology than the DES, especially in the case of axis II disorders (Table 12). A meta-analysis by van Ijzendoorn & Schuengel (1996) concluded that personality disorders did not appear to be associated with high scores on the DES. This finding has been replicated here, with only a small number of axis II scales

correlating with the DES. However, the new measure (WDS) would seem to be more able to tap dissociative experiences in a clinical group who present with axis II disorders (or comorbid axis II pathology). The ability of the WDS to tap into this pathology may be an important step forward in clarifying a role for dissociation in these 'difficult to treat' personality disorders. However, the clinical sample for this study was drawn from general adult mental health services. More useful data in the area of personality disorders may be gained from specialist services samples in which more participants with axis II pathology would contribute to the data.

Not only does the WDS tell us more than the DES about which disorders are related to dissociation, but the structure of the WDS also allows us to investigate the pattern of relationships that the proposed different forms of dissociation have with other variables. The DES identifies many relationships between disorders and the construct of dissociation. However, Table 8 shows that the different levels of dissociation (identified by the WDS but not the DES) were related to different symptom profiles, as predicted by the cognitive-behavioural model (see 1.7.3). For example, bipolar disorder was found to be related only to between-mode dissociation. If we were to interpret the findings within the proposed cognitive-behavioural framework it could be hypothesised that the symptom profile of bipolar disorder (including manic and contrasting major depressive episodes) may result from a decoupling mechanism between manic and depressive modes. It is also interesting that this disorder is thought to have a biological or genetic component (American Psychiatric Association, 1994). The relative biological/genetic components in each of the levels of dissociation may be a useful area for future research. In contrast, anxiety was related to only the two lower levels of dissociation. Symptoms characteristic of anxiety disorders (such as panic attacks, ritualistic behaviour and somatic discomfort) are predicted at these lower levels. The cognitive-behavioural conceptualisation of dissociation would suggest that panic attacks could result from the triggering of an anxiety-provoking memory, in the absence of contextual information identifying the trigger of this extreme emotional reaction. Ritualistic behaviour would also be predicted from a within-mode decoupling of the behavioural schema, leaving the individual unaware of the rationale for their behaviour. Therefore, the concepts of automatic and within-mode dissociation mechanisms might account for some of these anxiety symptoms. Though all levels of dissociation correlated with somatoform

symptoms, the strongest correlation was with the within-mode level of dissociation. The decoupling of physiological schemata from the cognitive and affective schemata would be predicted to be manifested behaviourally in somatic symptomatology.

The relationships observed here between the WDS levels of dissociation and reported symptomatology are in keeping with the theoretical predictions of the cognitive-behavioural model. The underlying structure of the WDS has enabled an interpretation of these findings in the context of this theoretical model. Kennedy & Waller (under consideration) predict distinct behavioural manifestations resulting from the three forms / mechanisms of dissociation. These results suggest that automatic, within-mode and between-mode dissociation (in various combinations) do predict some different forms of symptomatology. Whilst some predictions of the cognitive-behavioural conceptualisation of dissociation have been observed in symptomatology, others have not. For example, Kennedy & Waller (under consideration) predict somatic symtomatology to occur at the within-modes level of dissociation and table 11 shows a relationship with all levels, not a specific relationship with the predicted level. These less theoretically consistent results may be due to the small sample size here, the measures used, or the model may need re-formulating. However, the links between dissociation levels and predicted behavioural manifestations which have been shown have considerable potential clinical utility in formulating the relationships between dissociation and behavioural manifestations/presenting symptomatology.

4.1.2.3 The relationship between trauma and symptomatology

In considering the relationship between the variables of trauma and symptomatology in the clinical group, reports of childhood trauma were found to be related to both axis I and II pathologies. This finding replicates previous research, which has also suggested such a link (e.g., Briere & Zaidi, 1989; Jumper, 1995; Mullen et al., 1993).

4.1.2.3.1 *Axis I symptomatology and childhood trauma*

The severe clinical syndrome scale of thought disorder (which is usually classified as schizophrenic, schizophreniform or as the experience of brief reactive psychosis, depending primarily on the duration of the episode; Millon,

Millon, & Davis, 1994) was significantly correlated with retrospective self-reported sexual abuse. There was also a significant correlation between the sexual abuse measure and drug dependance. Of the remaining axis I pathologies, bipolar disorder was correlated with the emotional abuse scale, though the relationship ($r = .35$, $p < 0.02$) narrowly missed the acceptable level of significance.

Previous research has identified axis I pathologies to be related to childhood abuse. Significant associations between variables of thought disorder and sexual abuse replicate the finding of Gregg & Parks (1995). In a female psychiatric outpatient sample, they found that those who reported a history of sexual abuse scored higher on the MMPI-2 schizophrenia scale when compared to those who did not report a history of sexual abuse and related trauma. Some studies in clinical samples have classed the presence of psychotic symptoms as an exclusion criteria (e.g., Briere & Zaidi, 1989) and, in so doing, have limited the availability of data on links between trauma and thought disorder. However, findings similar to those here have also been reported in a number of non-clinical samples. In a community sample, Greenwald et al. (1990) found that those who reported sexual abuse scored significantly higher on the psychoticism scale of the Brief Symptom Inventory (BSI). In a sample consisting of American soldiers, Rosen and Martin (1996) also found a significant correlation between psychoticism scale of the BSI and the sexual abuse scale of the Childhood Trauma Questionnaire (CTQ). Sheerer (1997) reports that a relationship between childhood maltreatment and severe mental illness (such as schizophrenia and bipolar disorder) has also been implied in a number of published case studies, but concludes that the literature does not provide conclusive evidence of a link. This literature is also subject to the same methodological constraints as other childhood sexual abuse research (see 1.4). The results of the present study contribute to an inconclusive (and as yet small) literature on the relationship of thought disorder and bipolar disorder to sexual abuse. Though, as Sheerer (1997) suggests, results are still far from conclusive and many other variables may play significant roles.

The present study also found a significant relationship between the drug dependance scale of the MCMI-III and the measure of sexual abuse, and a correlation with the neglect scale which approached significance. Many studies have focussed on alcohol abuse (e.g., Margo & McLees, 1991; Mullen et al.,

1996). However, the finding here linking measures of sexual abuse and drug abuse specifically is not new (Browne and Finkelhor, 1986; Roesler & Dafler, 1993). In a sample of psychiatric patients, Briere & Zaidi (1989) found a significant difference in previous or current drug abuse (other than marijuana) between women presenting with a history of sexual abuse (57% drug use) and those with no history of sexual abuse (27% drug use). As in the current study, Briere & Zaidi found no significant association of alcohol abuse with the sexual abuse variable, suggesting that substance abuse should not be considered as a homogenous variable when investigating its relation to childhood trauma. Mullen (1993) also found a significant difference in drug dependance between sexually abused and control groups, reporting that most of the drug abuse was of prescription drugs. A number of theories have been proposed to explain these findings sugesting a relationship between drug dependance and sexual abuse, including the use of drugs to chemically dissociate following sexual victimisation (Briere & Runtz, 1987; Roesler & Dafler, 1993; Root, 1989).

To summarise the findings of associations between the measures of childhood trauma and axis I disorders, the present study is in keeping with previous research. It has replicated relationships between retrospective self-reported sexual abuse and both thought disorder and drug dependance measures. However, other relationships evident in some previous literature have not been shown here (e.g., relationships between childhood sexual abuse and depression and anxiety, see Browne & Finkehor, 1986; see 1.8.2.1). Again, this may be due to sample size or the measures used here. Browne & Finkelhor (1986) also note that less than one fifth of those reporting a history of sexual abuse report serious pathology. There may be other variables influencing this relationship which have not been considered here. This issue will be discussed further in section 4.2.2.

4.1.2.3.2 *Axis II symptomatology and childhood trauma*

Axis II personality disorders were also investigated in their relation to trauma measures. A significant correlation was found between the emotional abuse scale of the CATS and the severe personality pathology paranoid scale, and the sexual abuse measure was negatively related to the compulsive personality pattern measure. There were also some noteworthy relationships

which approached the $p < 0.01$ significance level. The correlation between the borderline personality disorder scale of the MCMI-III and the emotional abuse measure narrowly missed significance, as did relationships between the antisocial personality scale and the neglect measure. The relationship between the compulsive personality scale and both the emotional abuse and neglect measures also approached significance. Previous literature investigating the relationship between childhood abuse and personality pathology suggests that a history of abuse is linked to axis II disorders (Briere & Zaidi, 1989; Margo & McLees, 1991).

The symptomatology associated with paranoid personality pathology can be seen to be related to retrospective self-reported childhood trauma (emotional abuse) in the present study. This form of personality pathology has been described as an assumption that others will exploit, harm or deceive the individual in the absence of evidence for this (American Psychiatric Association, 1994). In interpreting this finding it can be hypothesised that a state of vigilance regarding the intentions of others would be an adaptive strategy in a situation of current emotional abuse. However, although such a strategy may no longer be adaptive in a non-abusive situation, it may still be active. Compensatory coping with such an abusive situation may also result in anger, directed at those who are believed to wish to harm or deceive the individual. Further investigation would be needed in order to test this hypothesis. In interpreting this finding it is also important to bear in mind that the use of a self-report measure of emotional abuse may be biased by current pathology. In the case of paranoid personality pathology (and indeed other pathologies), perceptions of treatment in childhood may be distorted.

A negative correlation was observed between the compulsive personality pathology scale and the measure of sexual abuse. Therefore, a self-reported history of sexual abuse predicts a lower level of this particular pathology, rather than a higher level. Given the traditional link between sexual abuse and increased symptomatology, this result is interesting. Table 9 shows that other symptomatology (particularly axis II) was also negatively correlated with the CATS measure of abuse history, though these relationships did not reach significance. This relationship, in which those who report having experienced childhood sexual abuse report less compulsive personality pathology, is not easily interpreted. One hypothesis may be that an underlying mechanism may form preventing or inhibiting the development of a compulsive personality style following childhood

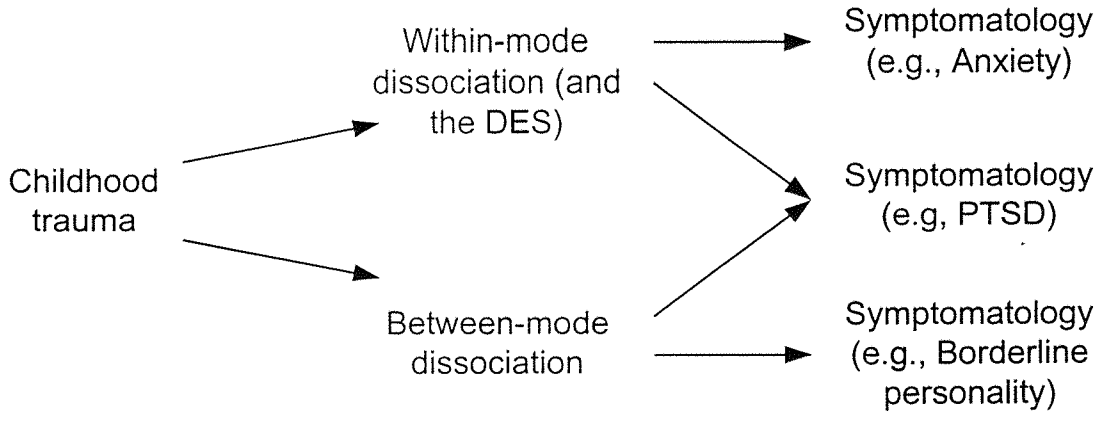
trauma. On further investigation, it seems that a mediating role of dissociation in this relationship is relevant to a discussion of this negative correlation. This will be discussed further in relation to hypothesis two.

In summary, the data suggest that measures of axis II personality pathology (which have been largely neglected in the literature) have links with measures of childhood trauma. Reports of emotional and sexual abuse have been shown here to be related to mild and severe personality pathology scales. The traditional link between sexual abuse and increased symptomatology has not been supported here in the link between the trauma variable and the compulsive personality pathology scale. This negative correlation emphasises the difficulties in using global measures of psychological distress, and suggests a hypothesis concerning the differential effect of trauma on different outcome variables. This has been suggested previously (Mullen et al. 1993), however, no evidence has been available to support this suggestion. Axis II disorders have not received as much attention in their relation to trauma as clinical syndromes have. These results illustrate the importance of including personality disorders in investigations of the relationship between trauma and symptomatology, although more research needs to be carried out in this area before firm conclusions can be drawn. Previous literature has also suggested that a history of abuse is linked most commonly to borderline personality disorder (Briere & Zaidi, 1989; Margo & McLees, 1991). This is a finding which has not been replicated here. However, Axis II disorders which have previously not been focused on have been identified here. These results may be an artefact of the sample, but also may reflect differing methodology. Both of the above studies observed that those reporting a history of sexual abuse were more likely to receive a diagnosis of borderline personality disorder, rather than using a measure of symptomatology associated with the disorder. They were also based on samples from inpatients and a psychiatric emergency room. Therefore, issues of the prevelance of borderline personality disorder in these samples and diagnostic practice in Axis II disorders are relavant to an interpretation of the present findings in relation to this previous research.

4.1.3 Summary of bivariate relationships investigated in hypothesis one

The testing of hypothesis one, which predicted the replication of bivariate links between the measures of trauma, dissociation and psychopathology, has expanded on previously considered relationships. The deconstruction of dissociation has provided us with a better understanding of its relationship to both trauma and pathology. The within-mode dissociation scale of the WDS and the DES each seem to measure a pattern of dissociation related to reports of childhood trauma. It seems that the between-mode scale is also related to some reported experiences of childhood trauma. However, the automatic form of dissociation has no association with self-reported trauma history. In turn, some scales measuring psychopathology were shown to be related to within- and/or between-mode dissociation. Therefore, it could be hypothesised that the effect of trauma on symptomatology may occur via two different pathways (within-mode and between-mode) or may be affected by both mechanisms. This present correlational data does not enable a conclusion regarding the causal direction of the relationships investigated. However, it has provided information on which to generate hypothesies for testing. Figure 15 represents an integrated model of the potential bivariate relationships.

Figure 15 Model of the relationship between trauma dissociation and symptomatology given the bivariate relationships observed



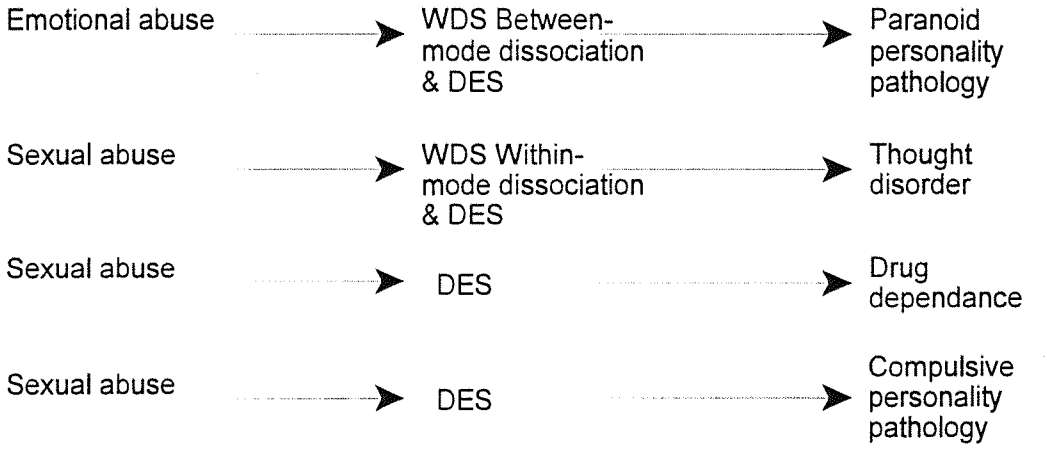
The implications of such a model are the identification of forms of dissociation associated with presenting symptomatology in the context of a trauma history. For example, presenting symptoms of anxiety have been shown to be

related to within-mode scale of the WDS but not the between-mode level of dissociation. Therefore, when presented with anxiety symptomatology and a reported trauma history, within-mode dissociation could be considered to be an important variable to investigate in detail. Similarly, Tables 11 & 12 show that a presentation of borderline or alcohol dependance symptomatology (in the context of reported childhood trauma) would suggest an investigation of between-mode dissociation instead. However, in the case of PTSD pathology (which is of course always in the context of trauma, though not always childhood trauma), both within- and between-mode dissociation would be of importance as each is associated with this form of symptomatology. These correlations of different levels of dissociation with trauma and symptomatology (which it seems, can be seen alone or together) have not been identified using the DES. Some of these relationships will be considered below in the analysis of dissociation as a mediating variable between childhood trauma and symptomatology.

4.2 MEDIATING ROLE OF DISSOCIATION IN THE RELATIONSHIP BETWEEN TRAUMA AND PSYCHOPATHOLOGY

Testing the mediating role of dissociation in the relationship between childhood trauma and symptomatology addressed the second hypothesis. Those variables which correlated significantly in the investigation of hypothesis one were used to test the role of dissociation as a mediator. Therefore, the role of dissociation was considered in the relationships between the variables of emotional abuse and paranoid personality pathology, and between sexual abuse and thought disorder, drug dependance and compulsive personality pathology. The mediational relationships identified are illustrated in Figure 16, and will be discussed below.

Figure 16 Complete mediating effects of dissociation found in the relationships between childhood abuse and symptomatology



The level of dissociation hypothesised to be the most severe (between-modes) was found to be a mediator in the relationship between the variables of emotional abuse and paranoid personality pathology. Though those scoring higher on the paranoid personality scale reported experiencing higher levels of automatic and within-mode dissociation (see Table 8), it is the between-mode level which was found to have a mediating effect between the trauma variable and this symptom pattern. This result is consistent with the model, which hypothesises a route from childhood trauma to paranoid personality symptomatology via between-mode dissociation. The bivariate correlations observed (hypothesis one) also suggested a possible link via the within-mode route within the hypothesised mediator model. However, this form of dissociation did not have an independent effect on symptomatology. The DES global measure of dissociation was also a complete mediator of this relationship. Though between-mode dissociation and the DES do not share an identical pattern of association with reported childhood trauma, they were both related to the emotional abuse variable. Therefore, the data supports the hypothesis that in the context of self-reported childhood emotional abuse, the between-mode scale and the DES are identifying similar forms of dissociation. The mediational effect of the DES allows us to identify dissociation as a general underlying mechanism, but the between-mode mediator effects directs us to a specific hypothesised form of dissociation (and away from other forms, such as within-mode), and is therefore more clinically useful in the

context of the cognitive-behavioural approach (see 1.7.3).

Dissociation was also found to be a mediator between the variable of sexual abuse and the symptomatology scale of thought disorder. The global measure (the DES) and the WDS within-modes measure of dissociation mediated this relationship. Again, the within-mode dissociation mediator is more useful than the global measure. Consistent with the mediational model, suggesting different pathways from trauma to different symptomatology, this finding suggests that, in the presence of a reported history of childhood sexual trauma, the mechanism mediating the symptomatology of thought disorder may be a within-mode form of dissociation.

Dissociation was also a mediator between the variable of sexual abuse and the drug dependance scale. This mediational relationship is also consistent with the cognitive-behavioural model of dissociation as an underlying mechanism in trauma related psychopathology. Though it has not been possible to identify a specific form of dissociation in the mediational analysis, drug dependance was associated with the highest level of between-mode dissociation. A manifestation of this form of dissociation is hypothesised to be a lack of self-control and impulsive behaviours (Kennedy & Waller, under consideration).

The negative relationship between the sexual abuse variable and the compulsive personality disorder scale was also found to be mediated by dissociation. In the absence of such a mediating relationship, the negative relationship between these variables is difficult to understand. However, introducing the mediational model leads us to hypothesise that a history of sexual abuse may be related to increased dissociation, and that having dissociated, individuals report less compulsive personality symptomatology. These results are consistent with a model of dissociation as a underlying mechanism that has a variety of effects on presenting symptomatology. In this case, dissociation may be acting as a mechanism preventing the development of compulsive personality symptomatology in the context of a history of trauma. The cognitive-behavioural model would also lead us to hypothesise that other behavioural manifestations of dissociation (symptomatology) are inconsistent with a compulsive personality symptomatology, or may influence behaviours associated with a compulsive personality style in other ways. The strict organisation evidenced in compulsive personality pathology may not be achievable in the context of dissociation. This

might also be an example of the adaptive role of dissociation (in preventing the development of pathology).

4.2.1 How these results build on mediation effects previously observed

In relation to previous studies, which have suggested a mediating effect of global measures of dissociation (e.g., Becker-Lausen et al., 1995; Ross-Gower et al., 1998), the present study has come to similar conclusions using the deconstructed variables. That is to say, the data supports dissociation as a mediating mechanism between some types of trauma and some psychological symptomatology. The present study has extended this previous work to include an examination of both abuse type and pathology type (including axis II disorders). These mediating relationships were not found between all types of trauma, dissociation and pathologies. The deconstruction of variables and the individual examination of their interrelationships has provided information not only about those variables that are related, but also about those that do not have the anticipated relationship given the previous literature. For example, Briere & Zaidi (1989) concluded that childhood sexual abuse was related to axis II disorders. However, the present results challenge this suggestion, since some Axis II disorders showed a negative correlation with childhood abuse. This study has demonstrated that the use of global measures of trauma, dissociation and psychopathology may result in global conclusions that mask or misrepresent specific relationships.

Although the data are generally consistent with the mediational model proposed, the conclusions are still tentative. Support has been found for the proposed causal pathways, and that support is more robust than the correlational relationships previously observed. However, the amounts of variance that have been accounted for (though significant) are relatively small. Therefore, the model as it stands is not comprehensive in identifying the factors impinging on the relationships between trauma, dissociation and psychopathology. Though accounting for all variance is an unrealistic target, more variance might be explained by considering additional factors that could qualify the relationships identified.

4.2.2 Possible qualifying factors

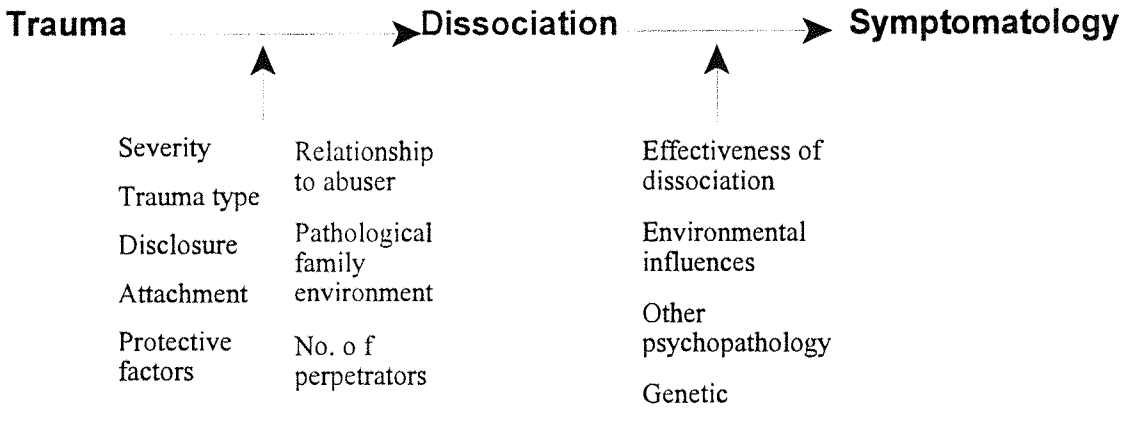
The first steps in modelling the relationship between trauma, dissociation and psychopathology (and moving beyond bivariate correlational relationships) have been considered here. They require the construction of models using mediator variables. There are many factors, some of which have been considered in previous research, which may also impact on the variables considered here and their interrelationships. An example might be the severity of the trauma (e.g., Mullen et al. 1993). Though it is beyond the scope of this present study, the development of a broader causal system may require the consideration of such moderating variables (Baron & Kenny, 1986). Moderators are variables that affect the strength or direction of the effect of the predictor on the criterion variable. A moderator acts to "partition the focal independent variable into subgroups that establish its domains of maximal effectiveness in regard to a given dependant variable" (Baron & Kenny, 1986, p.1173)

At each point in the proposed mediational model, moderators can be hypothesised from previous literature and theory. A great deal of work has been carried out to identify variables that might moderate the effect of childhood trauma on an individual. These would need to be considered in further research in order to develop a broader causal system based on the results obtained here. At the trauma level of the model, the effect that trauma has on the individual might be moderated by many factors, such as severity of trauma (e.g., Briere & Zaidi, 1989; Heath, Bean & Feinauer, 1996; Mullen et al., 1993), number of perpetrators (e.g., Briere & Runtz, 1988a; Briere & Zaidi, 1989; Farley & Keaney 1997), experience of disclosure (e.g., Roesler, 1994), or type of trauma (e.g., Browne & Finkelhor, 1986; Irwin, 1994). The relationship to the abuser (e.g., Briere & Runtz, 1988a; Browne & Finkelhor, 1986), pathogenic family environment (e.g., Nash, Hulsey, Sexton, Harralson & Lambert,1993), and attachment (e.g., Egeland & Susman-Stillman, 1996) may also be of relevance, either adding to the impact of the trauma or protecting against it. Rosenberg (1987) suggests that protective factors have not yet been identified in the field of childhood maltreatment, but lists possible candidates (positive relationship with non-offending parent, child's intelligence, emotional resiliency, sense of self-efficacy, warmth and cohesion of extended family, child's participation and mastery in community activities). Figure 17 shows how these moderator variables may be hypothesised to fit into the

proposed mediational model. For example, measures of trauma types are intercorrelated (see 1.8.2.2). Each form of trauma might also involve other forms (e.g., sexual abuse might include elements of emotional abuse)

Less research has been directed towards variables that might moderate the direction or strength of the dissociation-psychopathology link. However, it could be hypothesised that this link might be influenced by factors such as genetic predisposition (diathesis) to dissociate (Braun & Sachs, 1985), environmental influences (Waller & Ross, 1997), how well one dissociates (perfect dissociation would have no symptoms), and other pathologies (with separate aetiologies). These are also shown in figure 17.

Figure 17 Potential moderators and their integration into the mediational framework proposed here



Therefore, the data gathered in this study are to be considered in the context of potential moderating variables which have been shown to be important in previous research. An integration of these is beyond the scope of the present study. However, the present study offers a framework in which to continue investigation of a broader causal model. However, much more research is needed in order to develop this approach further.

4.3 THEORETICAL FRAMEWORK OF THE FINDINGS

The third hypothesis was concerned with evaluating the cognitive-behavioural conceptualisation of dissociation. As discussed in 1.7.2, the absence of testable theoretical models in the field of dissociation research has been

problematic. Within the theoretical framework used here, symptoms / behavioural manifestations of the proposed three mechanisms of dissociation are measured by the three scales of the WDS. The convergent validity of this new scale with the DES was good, and the WDS was correlated with the same measures of trauma and symptomatology as the DES. The WDS was also related to further variables, notably axis II symptomatology. Some support was also shown for the validity of the WDS scale structure in the differential relationships between subscales and symptomatology. These results are consistent with the hypothesised relationship between a dissociative mechanism and a resulting behavioural manifestation of this internal process. The data suggests that different dissociative mechanisms may result in different symptom profiles and, as hypothesised, it was possible to distinguish three forms of dissociation based on psychological processes. This offers preliminary support for the cognitive-behavioural theory of dissociation presented by Kennedy and Waller (under consideration). However, further research is needed to investigate this theory. Methodological constraints of this present study (e.g., small sample size and general limitations of research into childhood trauma) necessitate that these results be replicated.

Though some support was found for the cognitive-behavioural model, the three forms of dissociation did not form a hierarchy as the theory suggests. It was hypothesised that the higher levels of dissociation (those incurring a higher functional cost to the individual) would not appear without the presence of the less costly lower levels. The results demonstrate that in many cases within- and/or between-mode dissociation were correlated with pathology measures, but significant relationships with level one (automatic) and/or two (within-mode) dissociation were absent (see Table 8). This lack of a hierarchical structure in dissociation forms could be interpreted in a number of ways. The hierarchical hypothesis suggests a developmental course of dissociation. Initial attempts at dissociation would involve less costly efforts, and as these failed to block awareness of disturbing information adequately, a more costly but effective form would be added to supplement the existing dissociative mechanism. It is possible that within this structure a lower form of dissociation may be used and then replaced with a more effective form, leaving lower levels of dissociation disused. This could account for the presence of between-mode dissociation in the absence of lower levels (as seen in bipolar disorder, antisocial and aggressive personality

pathology). However, such a model would also need to account for patterns such as the correlations of borderline and passive aggressive personality pathology with automatic and between-modes dissociation in the absence of the middle level (within-mode dissociation). Therefore, more costly and effective levels of dissociation would not need only to replace lower levels, but the lower levels may need to be retained along with the new levels. In conclusion, hypothesis three was only partially supported. Some support was found for the prediction that it would be possible to distinguish three forms of dissociation based on psychological processes. However, these three forms did not form a hierarchy as was also hypothesised.

4.4 CLINICAL RELEVANCE OF RESULTS

One of the central interests in this study has been to investigate a testable theory of dissociation, which would offer substantial clinical utility. The deconstructing of dissociation and the use of non-global measures of trauma and symptomatology variables has provided new information on the relationship between these variables. In replicating and extending previously investigated bivariate relationships in this way, it has been possible to interpret these relationships against a explanatory theoretical background. The relationship between the dissociative mechanisms and symptoms of both axis I and II disorders is of importance to our understanding of both dissociation and these symptom groups. The data suggesting that dissociation is an appropriate mediator (i.e. generative mechanism through which an independent variable affects a dependent variable, Baron & Kenny, 1986) between some forms of traumatic experience and symptomatology is also of clinical importance. As discussed in 1.7.1, symptoms may be resistant to treatment if the underlying mechanism is not also addressed. In the light of these results we could hypothesise that, in some individuals with certain experiences and symptomatology, dissociation may interfere with attempts to modify core beliefs, symptom-related beliefs and indeed symptomatology. This does not imply that changes in dissociation are sufficient for changing levels of pathology, but Ross-Gower et al. (1998) and Kennerley (1996) suggest that the treatment of dissociation may be a necessary first step in order to allow (further) intervention to take place. These results offer some support to these suggestions. In the context of the role of dissociation in the

eating disorders, Everill & Waller (1995) also suggest that if trauma schemata and dissociation are not treated, bulimic behaviours may simply be replaced by other (functionally equivalent) impulsive behaviours or by an increase in dissociation. Therefore, the importance of identifying and appropriately addressing dissociation may be of significant clinical utility.

Treatment of dissociation has not generally been very successful. These present results may suggest some reasons for this. It has been observed that existing therapies may already, unintentionally, be targeting different forms of dissociation (Kennedy & Waller, under consideration). Many psychoanalytically-derived therapies address integration of personality (between-mode dissociation). In contrast, traditional cognitive therapy would be more adapted to addressing automatic and within-mode dissociation, but the more schema-focussed approaches would focus on between-mode dissociation (Kennedy & Waller, under consideration). One would need to be lucky to pair the form of dissociation with the right therapy without a means of identifying the form of dissociation in operation. This is not to say that the WDS is the only possible (or the best) way of doing this. However, the cognitive-behavioural approach can provide scope for a shared formulation of dissociation. This research is a start at deconstructing dissociation in an explanatory theoretical framework, which may allow more effective targeting of therapy.

4.5 FUTURE DIRECTIONS FOR RESEARCH

Future research should look to continuing the search for mediators, and to developing better measures of possible mediators. There has already been some investigation of other possible mediators in the relationship between trauma and symptomatology. Recent research has addressed the role of shame as a mediator (e.g., Andrews 1995, 1997; Andrews, Brewin, Rose, & Kirk, in press), and has found that shame mediates the relationship of abuse with PTSD, depression and bulimia. Ross-Gower et al. (1998) also point to the need to focus on the psychological factors that might mediate the relationship between trauma and psychological disturbance. They suggest self-denigratory cognitions, self-esteem and dissociation as possible mediators for future investigation. It is unlikely that one mediator could explain all symptomatology. Therefore, future research will need to investigate these, and other possible mechanisms. In addition, for the

same symptom there can be more than one mechanism. However, the mechanisms must be well defined theoretically and well measured if they are to be of practical assistance. We should also be looking to investigate moderators of this relationship as discussed above (see 4.2.2). In their commentary on mediational modelling, Baron & Kenny (1986) stress the importance of building on identified mediators to create combined mediator-moderator models, which better explain relationships and expand causal models.

In investigating its place as a mediator, the development of an understanding of the construct of dissociation should not be set aside. Research should be aimed at devising better measures of the dissociative mechanism (for example, a measure not relying entirely on self-report). Many cross-sectional studies conclude that a prospective study needs to be carried out in order to establish causality. This study is no different. When using a methodology of causal modelling, causality is based on the theoretical underpinning. Here, trauma is hypothesised to cause dissociation, and the behavioural manifestations of the dissociative decoupling is the observed psychological symptomatology. However, prospective study of childhood trauma, dissociation and symptomatology is problematic, not least due to the fact that all measures of dissociation in adults are self-report measures. In the one study that has tried to measure dissociation in young children (Ogawa et al.,1997), behavioural reports were used. This paper points out that behavioural measures of dissociation miss out experiences (such as depersonalisation and derealisation) that cannot be seen by an observer. In order to underpin the development of new measures, further development and testing of explanatory theories (such as the cognitive-behavioural conceptualisation tested here) is also necessary.

Issues in the relationship between trauma and dissociation also need addressing in future work in order to clarify the role of possible moderators such as those suggested in 4.2.2. As has been recognised for some time, the simple experience of a 'traumatic' event may not always result in a negative outcome. It has also been argued that there is a need for the event to be perceived as traumatic. The measure of trauma used in the present study (CATS) makes an attempt to address this problem. Sanders & Becker-Lausen (1995) attempted to construct the CATS as a measure of perceived trauma, rather than aiming at descriptors of the event. Future research may need to examine further the

relationships between representations of experience perceived as traumatic, dissociation and pathology. The cognitive-behavioural model of dissociation is better adapted than other theories to look at cognitive content following trauma (rather than experience of trauma per se). Recent developments in cognitive theory (including the concept of early maladaptive schemas - Young, 1994) suggest that a number of variables contribute to the development of maladaptive schemas. In addition to experience of 'traumatic events', variables such as temperament and early relationships are considered important in the formation of schemas.

Finally, if different treatments are targeting different levels of the dissociative mechanism as suggested here, controlled trials need to be carried out to look at this empirically. In a background of an increased awareness for the need for evidence-based practice, further research is needed so that clinicians can base their treatment of dissociative symptoms on clear evidence.

4.6 CONCLUSION

The aim of this study was to investigate the role of dissociation in the relationship between childhood trauma and psychological symptomatology. Previous research exploring bivariate relationships between these three variables was replicated and extended. The present study was able to do this by basing the investigation on an explanatory (rather than a descriptive) conceptualisation of dissociation.

Using a new measure (the WDS), which deconstructs the concept of dissociation, three forms of dissociation were identified (automatic, within-mode and between-mode). The use of this deconstructed measure of dissociation (rather than the global DES measure) has resulted in a clearer understanding of dissociation. The three levels of dissociation were found to be differentially related to both axis I and II symptomatology, and childhood trauma. Some of the diverse symptomatology investigated here may be seen as a behavioural manifestation of these dissociative mechanisms, and can be predicted from the cognitive-behavioural model, though some other predictions were not supported.

The role of dissociation as a mediating mechanism has also been shown in a number of symptomatology patterns (i.e. drug dependance, thought disorder, compulsive personality pattern, and paranoid personality pathology). However,

this study has also demonstrated that the relationship between trauma, dissociation and psychological symptomatology is not a simple one. The path by which traumatic experience may lead to pathology may be via different forms of dissociation in regards to different disorders (within-mode and between-mode pathways).

Though these findings are significant, we recognise that dissociation is also not the only possible mechanism in operation in this relationship. Baron & Kenny (1986) suggest that causal models should be built upon, using existing models (such as the one which has been developed here) as a base for investigating further mediators and moderators. Future research also needs to be based on a similarly explanatory theoretical framework such as the cognitive-behavioural model drawn upon here.

Baron & Kenney (1986) describe the search for mediating variables as asking 'how?' or 'why?' effects occur. The identification of mediator variables has clinical implications because they explain how or why "external events take on internal psychological significance" (Barron & Kenny, 1986). This study has addressed these questions. It has presented evidence supporting the cognitive-behavioural conceptualisation of dissociation as an explanatory underlying mechanism in the translation of childhood trauma into adult psychological distress. However, there is still development to be done in this field. This present study has opened up areas for future research, both in dissociation and in the relationship between trauma and symptomatology.

APPENDICES

Contents of appendices

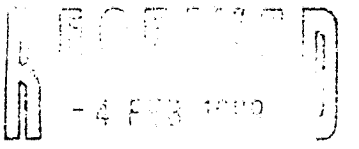
Appendix 1
Multicentre Research Ethics Committee (MREC) approval letter

SOUTH AND WEST MULTICENTRE RESEARCH ETHICS COMMITTEE
Chairman: Barrie Behenna Vice-Chairman: Dr John Alexander

South and West Devon Health Authority
The Lescaze Offices
Shinners Bridge
Dartington TQ9 6JE
Phone: 01803 861947
Fax: 01803 861914

Professor Glen Waller
Professor of Clinical Psychology
Department of Psychology
University of Southampton
Southampton SO17 1BJ

30 January 1999



Dear Professor Waller

Research Protocol: MREC/98/6/97
Proposal Title: Dissociation in adult psychological disturbance: developing a clinically useful measure.
Revised PIS: 27 January 1999: Version 3

The Chairman of the South and West MREC has considered the amendments submitted in response to the Committee's earlier review of your application on 14 January 1999, as set out in our letter dated 20 January 1999.

The Chairman, acting under delegated authority is satisfied that these accord with the decision of the Committee and has agreed that there is no objection on ethical grounds to the proposed study whose title is given at the head of this letter. I am, therefore, happy to give you our approval on the understanding that you will follow the protocol as agreed. The project must be started within three years of the date on which MREC approval is given. I would ask you to submit to LRECs only the revised paperwork reflecting the requirements of the MREC as referenced in the response form.

Please read the notes regarding notification of changes and completion of progress reports at the end of the Response Form carefully, as the MREC requires that they be followed. In addition approval is given subject to the conditions set out below:

Conditions of Approval

- You follow the protocol agreed and advise the MREC of any changes made. Any changes to the protocol will require prior MREC approval.

- You complete the final report form sent to you at the nd of your project and return it to the MREC administrator.

- You notify any serious unexpected adverse drug reactions to the MREC administrator, appropriate LRECs and your sponsor using the procedure set out in the General Guidance for Researchers.

You will no doubt realise that whilst the MREC has given approval for the study on ethical grounds, it is still necessary for you to obtain management approval from the relevant Clinical Directors and/or Chief Executive of the Trusts (or Health Boards/DHAs) in which the work will be done.

Local Submissions

It is also your responsibility to ensure that any local researcher seeks the approval of the relevant LREC before starting their research. To do this you should submit the appropriate number of copies of the following to the relevant LRECs..

- this letter
- the MREC Application Form (including copies of any questionnaires)
- the MREC Response Form sent previously.
- Annexe D of the Application Form
- **one** copy of the protocol

MREC Evaluation

During the first year after its establishment, the MREC would like to hear your views and experiences while using the new process. Please can you help us by completing the Principal Researcher Evaluation Form attached to this letter and returning it to ***Jo Sumner, Centre of Medical Law and Ethics, King's College London, Strand, London WC2R 2LS***. Your help is also appreciated in ensuring that local researchers are sent a Local researcher Evaluation Form also attached to this letter. Your views and comments are vital to ensure the process evolves and responds to the needs of multi-centre researchers and we look forward to receiving your comments.

Local Sites

Whilst the MREC would like as much information as possible about local sites at the time you apply for ethical approval, it is understood that this is not always possible. You are asked, however, to send a completed copy of Annexe C for each local site as soon as a researcher has been recruited. This is essential to enable the MREC to monitor the research it approves and to the smooth running of the evaluation.

ICH GCP Compliance

The MRECs are fully compliant with the International Committee on Harmonisation Good Clinical Practice (ICH) Guidelines for the Conduct of Trials Involving the Participation of Human Subjects as they relate to the responsibilities, composition, function, operations and records of an Independent Ethics Committee/ Independent Review Board. To this end it undertakes to adhere as far as is consistent with its Constitution, to the relevant clauses of the ICH Harmonised Tripartite Guideline of Good Clinical Practice, adopted by the Commission of the European Union on 17 January 1997. The Standing Orders and a Statement of

Compliance were included on the computer disk containing the guidelines and application form and are available on request.- or on the Internet at **http://dspace.dial.pipex.com/mrec**

Yours sincerely

Barrie Behenna

Mr Barrie Behenna
Chairman
South and West Multicentre Research Ethics Committee

Enclosures *Progress Report Form*
Principal Researcher Evaluation Form
Local Researcher Evaluation Form

Appendix 2
Participant Information Sheet - clinical sample

University of Southampton

Department of Psychology

University of Southampton
Highfield
Southampton
SO17 1BJ
United Kingdom

Telephone (+44) 01703 595000
Fax (+44) 01703 594597
E-Mail

Participant Information Sheet

Study title: Developing a Measure of Dissociation

What is the study about?

We are carrying out a study, based at the University of Southampton, to investigate the experience of dissociation. Dissociation describes a failure to integrate information, experiences and perceptions. Parts of consciousness that would normally be integrated are not associated with each other in the way that one would expect. This results in memory lapses, feeling 'detached' from the world, and becoming absorbed in activities or thought.

Dissociation is perfectly normal, and is present to some degree in all of us. However, at very high levels it can become problematic. At these levels, it is found in many psychological and psychiatric problems. However, we do not yet have sufficiently good measures of the experience for clinical purposes (detecting it and guiding treatment).

In this study, we aim to develop a measure of dissociation. By gaining a better understanding and assessment of dissociation, we hope to be able to develop more effective approaches for treatment.

As part of the research we are asking all adults referred to Clinical Psychology services if you are willing to complete some questionnaires. This should take between 1 and 1 ½ hours, and they will be fully explained to you by the researcher. If you are happy to participate, you will be asked to sign a consent form.

All information given is strictly confidential. The information that you give would only be divulged to other relevant agencies if your answers raise legal concerns (particularly issues of child protection). Completed questionnaires will be kept safely, and names and personal details will not appear on the questionnaire. *Your results will be made available to your clinical psychologist only if you want them to be.*

If you agree to be involved in this study, you are free to withdraw;

- at any time
- without having to give a reason for withdrawing
- and without influencing current or future treatment

If you would like any further information please do not hesitate to contact:

Glenn Waller
Department of Psychology,
University of Southampton,
Southampton SO17 1BJ
Tel: 01703-595320

Appendix 3
Consent form

Consent Form

Study Title: Developing a Measure of Dissociation.

Please complete the following:

	Circle Response
Have you read the participant information sheet?	Yes / No
Have you had an opportunity to ask questions and discuss the study?	Yes / No
Have you received satisfactory answers to all your questions?	Yes / No
Have you received enough information about the study?	Yes / No
Do you agree to take part in this research?	Yes / No

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

Name (in Block capitals).....

Appendix 4
Participant Information Sheet - non-clinical sample

Participant Information Sheet

Study title: Developing a Measure of Dissociation

What is the study about?

We are carrying out a study, based at the University of Southampton, to investigate the experience of dissociation. Dissociation describes a failure to integrate information, experiences and perceptions. Parts of consciousness that would normally be integrated are not associated with each other in the way that one would expect. This results in memory lapses, feeling 'detached' from the world, and becoming absorbed in activities or thought.

Dissociation is perfectly normal, and is present to some degree in all of us. However, at very high levels it can become problematic. At these levels, it is found in many psychological and psychiatric problems. However, we do not yet have sufficiently good measures of the experience for clinical purposes (detecting it and guiding treatment).

In this study, we aim to develop a measure of dissociation. By gaining a better understanding and assessment of dissociation in all groups, we hope to be able to develop more effective approaches for treatment in clinical practice.

As part of the research we are asking if you are willing to complete some questionnaires. This should take between 45 minutes and 1 hour, and they will be fully explained to you by the researcher. If you are happy to participate, you will be asked to sign a consent form.

All information given is strictly confidential. Completed questionnaires will be kept safely, and names and personal details will not appear on the questionnaire.

If you agree to be involved in this study, you are free to withdraw;

- at any time
- without having to give a reason for withdrawing
- and without influencing current or future treatment

If you would like any further information please do not hesitate to contact:

Helen Rouse
Department of Psychology,
University of Southampton,
Southampton SO17 1BJ
Tel: 01703-592633

Appendix 5
Demographic Information Sheet

(CLINICAL SAMPLE)

Participant identification number: _____
(To preserve the anonymity of participants, your completed questionnaires will be identified by this number only. You do not need to write your name on any of the questionnaires)

Thank you for agreeing to take part in this research. Before completing the questionnaires, please fill in the following general information about yourself.

Age: _____ years

Gender: Male / Female (circle as appropriate)

Marital status: Single / Married / Co-habiting / Separated / Divorced (circle as appropriate)

Occupation: _____

Have you ever received psychological treatment? Yes No (circle as appropriate)

If yes, what was it for? _____

Would you be happy for your clinical psychologist to receive some feedback on the results of these research questionnaires?

Yes No

(NON-CLINICAL SAMPLE)

Participant identification number:
(To preserve the anonymity of participants, your completed questionnaires will be identified by number only. You do not need to write your name on any of the questionnaires)

Thank you for agreeing to take part in this research. Before completing the questionnaires, please fill in the following general information about yourself.

Age: _____ years

Gender: Male Female (circle as appropriate)

Marital status: Single Married Separated Divorced
(circle as appropriate)

Occupation: _____

Have you ever received psychological treatment? Yes No (circle as appropriate)

If yes, what was it for? _____

Appendix 6
Wessex Dissociation Scale (WDS)

W D S

NSTRUCTIONS
'his questionnaire asks about experiences that you may have in your daily life. Please indicate, by ticking one of the ıoxes, how often you have experiences like these. It is important that your answers show how often you have these ›xperiences when you are **not** under the influence of alcohol or drugs.

		Never	Rarely	Some-times	Often	Very often	All the time
1	Unwanted images from my past come into my head						
2	I hear voices when no-one has actually said anything						
3	Other people describe meetings that we have had, but that I cannot remember						
4	Unwanted memories come into my head						
5	My personality is very different in different situations						
6	My mood can change very rapidly						
7	I have vivid and realistic nightmares						
8	I don't always remember what people have said to me						
9	I feel physical pain, but it does not seem to bother me as much as other people						
10	I smell things that are not actually there						
11	I remember bits of past experiences, but cannot fit them together						
12	I have arguments with myself						
13	I do not seem to be as upset by things as I should be						
14	I act without thinking						
15	I do not really seem to get angry						
16	I just feel numb and empty inside						
17	I notice myself doing things that do not make sense						
18	Sometimes I feel relaxed and sometimes I feel very tense, even though the situation is the same						
19	Even though it makes no sense, I believe that doing certain things can prevent disaster						
20	I have unexplained aches and pains						
21	It feels as if there is more than one of me						

		Never	Rarely	Some-times	Often	Very often	All the time
22	Unwanted thoughts come into my head						
23	My mind just goes blank						
24	I feel touched by something or someone that is not there						
25	I have big gaps in my memory						
26	I see something that is not actually there						
27	My body does not feel like my own						
28	I cannot control my urges						
29	I feel detached from reality						
30	Chunks of time seem to disappear without my being able to account for them						
31	I sometimes look at myself as though I were another person						
32	Things around me do not seem real						
33	I do not seem to feel anything at all						
34	I taste something that I have not eaten						
35	I find myself unable to think about things, however hard I try						
36	I talk to myself as if I was another person						
37	I do not seem to feel physical pain as much as other people						
38	I hear things that are not actually there						
39	I find myself in situations or places with no memory of how I got there						
40	It is absolutely essential that I do some things in a certain way						

Appendix 7
Dissociative Experiences Scale (DES)
Carlson & Putnam (1986)

APPENDIX A
DES
Eve Bernstein Carlson, Ph.D. & Frank W. Putnam, M.D.

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)

Date_____ Age_____ Sex: M F

1. Some people have the experience of driving or riding in a car or bus or subway and suddenly realizing 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 realize 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 who 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 recognize 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 recognizing 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 off 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 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%

Appendix 8
Child Abuse and Trauma Scale (CATS)
Sanders & Becker-Lausen (1995)

HOME ENVIRONMENT QUESTIONNAIRE

This questionnaire seeks to determine the general atmosphere of your home when you were a child or teenager and how you felt you were treated by your parents or principal caretaker. (If you were not raised by one or both of your biological parents, please respond to the questions below in terms of the person or persons who had the primary responsibility for your upbringing as a child.) Where a question inquires about the behaviour of both of your parents and your parents differed in their behaviour, please respond in terms of the parent whose behaviour was the more severe or worse.

In responding to these questions, simply circle the appropriate number according to the following definitions:

0 = never
1 = rarely
2 = sometimes
3 = very often
4 = always

To illustrate, here is a hypothetical question:
Did your parents criticise you when you were young?

0 1 2 3 4

If you were rarely criticised you should circle number 1.

Please answer all the questions.

1.	Did your parents ridicule you?	0 1 2 3 4
2.	Did you ever seek outside help or guidance because of problems in your home?	0 1 2 3 4
3.	Did your parents verbally abuse each other?	0 1 2 3 4
4.	Were you expected to follow a strict code of behaviour in your home?	0 1 2 3 4
5.	When you were punished as a child or teenager, did you understand the reason you were punished?	0 1 2 3 4
6.	When you didn't follow the rules of the house, how often were you severely punished?	0 1 2 3 4
7.	As a child did you feel unwanted or emotionally neglected?	0 1 2 3 4
8.	Did your parents insult you or call you names?	0 1 2 3 4
9.	Before you were 14, did you engage in any sexual activity with an adult?	0 1 2 3 4
10.	Were your parents unhappy with each other?	0 1 2 3 4
11.	Were your parents unwilling to attend any of your school-related activities?	0 1 2 3 4
12.	As a child were you punished in unusual ways (eg. Being locked in a closet for a long time or being tied up)?	0 1 2 3 4
13.	Were there traumatic or upsetting sexual experiences when you were a child or teenager that you couldn't speak to adults about?	0 1 2 3 4
14.	Did you ever think you wanted to leave your family and live with another family?	0 1 2 3 4

15.	Did you ever witness the sexual mistreatment of another family member?	0	1	2	3	4
16.	Did you ever seriously think about running away from home?	0	1	2	3	4
17.	Did you witness the physical mistreatment of another family member?	0	1	2	3	4
18.	When you were punished as a child or teenager, did you feel the punishment was deserved?	0	1	2	3	4
19.	As a child or teenager, did you feel disliked by either of your parents?	0	1	2	3	4
20.	How often did your parents get really angry with you?	0	1	2	3	4
21.	As a child did you feel that your home was charged with the possibility of unpredictable physical violence?	0	1	2	3	4
22.	Did you feel comfortable brining friends home to visit?	0	1	2	3	4
23.	Did you feel safe living at home?	0	1	2	3	4
24.	When you were punished as a child or teenager, did you feel "the punishment fit the crime"?	0	1	2	3	4
25.	Did your parents ever verbally lash out at you when you did not expect it?	0	1	2	3	4
26.	Did you have traumatic sexual experiences as a child or teenager?	0	1	2	3	4
27.	Were you lonely as a child?	0	1	2	3	4
28.	Did your parents yell at you?	0	1	2	3	4
29.	When either of your parents was intoxicated, were you ever afraid of being sexually mistreated?	0	1	2	3	4
30.	Did you ever wish for a friend to share your life?	0	1	2	3	4
31.	How often were you left at home alone as a child?	0	1	2	3	4
32.	Did your parents blame you for things you didn't do?	0	1	2	3	4
33.	To what extent did either of your parents drink heavily or abuse drugs?	0	1	2	3	4
34.	Did your parents ever hit or beat you when you did not expect it?	0	1	2	3	4
35.	Did your relationship with your parents ever involve a sexual experience?	0	1	2	3	4
36.	As a child, did you have to take care of yourself before you were old enough?	0	1	2	3	4
37.	Were you physically mistreated as a child or teenager?	0	1	2	3	4
38.	Was your childhood stressful?	0	1	2	3	4

Appendix 9
Millon Clinical Multiaxial Inventory - III (MCMIIII)
Millon (1994)
Photocopy taken from copyright original

TEST DIRECTIONS:

The following pages contain a list of statements that people use to describe themselves. They are printed here to help you in describing your feelings and attitudes. Try to be as honest and serious as you can in marking the statements.

Do not be concerned if a few statements seem unusual; they are included to describe people with many types of problems. If you agree with a statement or decide that it describes you, fill in the (T) on the separate answer sheet to mark it True (● (F)). If you disagree with a statement or decide that it does not describe you, fill in the (F) to mark it False ((T) ●). Try to mark every statement, even if you are not sure of your choice. If you have tried your best and still cannot decide, mark the (F) for False.

Use a soft, black lead pencil and make a heavy, dark mark when filling in the circles. If you make a mistake or change your mind, please erase the mark fully and then fill in the correct circle. *Do not make any marks on this booklet.*

There is no time limit for completing the inventory, but it is best to work as rapidly as is comfortable for you.

ABCD

MCMI-III™

Millon Clinical Multiaxial Inventory-III™

by Theodore Millon, PhD, with Carrie Millon, PhD, and Roger Davis

MILLON CLINICAL MULTIAXIAL INVENTORY-III

Hand-Scoring Answer Sheet

NAME OR IDENTIFICATION NUMBER

TEST DATE | AGE | GENDER | RACE

1	T	F	31	T	F	61	T	F	91	T	F	121	T	F	151	T	F
2	T	F	32	T	F	62	T	F	92	T	F	122	T	F	152	T	F
3	T	F	33	T	F	63	T	F	93	T	F	123	T	F	153	T	F
4	T	F	34	T	F	64	T	F	94	T	F	124	T	F	154	T	F
5	T	F	35	T	F	65	T	F	95	T	F	125	T	F	155	T	F
6	T	F	36	T	F	66	T	F	96	T	F	126	T	F	156	T	F
7	T	F	37	T	F	67	T	F	97	T	F	127	T	F	157	T	F
8	T	F	38	T	F	68	T	F	98	T	F	128	T	F	158	T	F
9	T	F	39	T	F	69	T	F	99	T	F	129	T	F	159	T	F
10	T	F	40	T	F	70	T	F	100	T	F	130	T	F	160	T	F
11	T	F	41	T	F	71	T	F	101	T	F	131	T	F	161	T	F
12	T	F	42	T	F	72	T	F	102	T	F	132	T	F	162	T	F
13	T	F	43	T	F	73	T	F	103	T	F	133	T	F	163	T	F
14	T	F	44	T	F	74	T	F	104	T	F	134	T	F	164	T	F
15	T	F	45	T	F	75	T	F	105	T	F	135	T	F	165	T	F
16	T	F	46	T	F	76	T	F	106	T	F	136	T	F	166	T	F
17	T	F	47	T	F	77	T	F	107	T	F	137	T	F	167	T	F
18	T	F	48	T	F	78	T	F	108	T	F	138	T	F	168	T	F
19	T	F	49	T	F	79	T	F	109	T	F	139	T	F	169	T	F
20	T	F	50	T	F	80	T	F	110	T	F	140	T	F	170	T	F
21	T	F	51	T	F	81	T	F	111	T	F	141	T	F	171	T	F
22	T	F	52	T	F	82	T	F	112	T	F	142	T	F	172	T	F
23	T	F	53	T	F	83	T	F	113	T	F	143	T	F	173	T	F
24	T	F	54	T	F	84	T	F	114	T	F	144	T	F	174	T	F
25	T	F	55	T	F	85	T	F	115	T	F	145	T	F	175	T	F
26	T	F	56	T	F	86	T	F	116	T	F	146	T	F			
27	T	F	57	T	F	87	T	F	117	T	F	147	T	F			
28	T	F	58	T	F	88	T	F	118	T	F	148	T	F			
29	T	F	59	T	F	89	T	F	119	T	F	149	T	F			
30	T	F	60	T	F	90	T	F	120	T	F	150	T	F			

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Product Number
33008

1. Lately, my strength seems to be draining out of me, even in the morning.
2. I think highly of rules because they are a good guide to follow.
3. I enjoy doing so many different things that I can't make up my mind what to do first.
4. I feel weak and tired much of the time.
5. I know I'm a superior person, so I don't care what people think.
6. People have never given me enough recognition for the things I've done.
7. If my family puts pressure on me, I'm likely to feel angry and resist doing what they want.
8. People make fun of me behind my back, talking about the way I act or look.
9. I often criticize people strongly if they annoy me.
10. What few feelings I seem to have I rarely show to the outside world.
11. I have a hard time keeping my balance when walking.
12. I show my feelings easily and quickly.
13. My drug habits have often gotten me into a good deal of trouble in the past.
14. Sometimes I can be pretty rough and mean in my relations with my family.
15. Things that are going well today won't last very long.
16. I am a very agreeable and submissive person.
17. As a teenager, I got into lots of trouble because of bad school behavior.
18. I'm afraid to get really close to another person because it may end up with my being ridiculed or shamed.
19. I seem to choose friends who end up mistreating me.
20. I've had sad thoughts much of my life since I was a child.
21. I like to flirt with members of the opposite sex.
22. I'm a very erratic person, changing my mind and feelings all the time.
23. Drinking alcohol has never caused me any real problems in my work.
24. I began to feel like a failure some years ago.
25. I feel guilty much of the time for no reason that I know.
26. Other people envy my abilities.
27. When I have a choice, I prefer to do things alone.
28. I think it's necessary to place strict controls on the behavior of members of my family.
29. People usually think of me as a reserved and serious-minded person.
30. Lately, I have begun to feel like smashing things.
31. I think I'm a special person who deserves special attention from others.
32. I am always looking to make new friends and meet new people.
33. If someone criticized me for making a mistake, I would quickly point out some of that person's mistakes.
34. Lately, I have gone all to pieces.
35. I often give up doing things because I'm afraid I won't do them well.
36. I often let my angry feelings out and then feel terribly guilty about it.
37. I very often lose my ability to feel any sensations in parts of my body.
38. I do what I want without worrying about its effect on others.
39. Taking so-called illegal drugs may be unwise, but in the past I found I needed them.
40. I guess I'm a fearful and inhibited person.

Please go on to the next page

41. I've done a number of stupid things on impulse that ended up causing me great trouble.
42. I never forgive an insult or forget an embarrassment that someone caused me.
43. I often feel sad or tense right after something good has happened to me.
44. I feel terribly depressed and sad much of the time now.
45. I always try hard to please others, even when I dislike them.
46. I've always had less interest in sex than most people do.
47. I tend to always blame myself when things go wrong.
48. A long time ago, I decided it's best to have little to do with people.
49. Since I was a child, I have always had to watch out for people who were trying to cheat me.
50. I strongly resent "big shots" who always think they can do things better than I can.
51. When things get boring, I like to stir up some excitement.
52. I have an alcohol problem that has made difficulties for me and my family.
53. Punishment never stopped me from doing what I wanted.
54. There are many times, when for no reason, I feel very cheerful and full of excitement.
55. In recent weeks I feel worn out for no special reason.
56. For some time now I've been feeling very guilty because I can't do things right anymore.
57. I think I am a very sociable and outgoing person.
58. I've become very jumpy in the last few weeks.
59. I keep very close track of my money so I am prepared if a need comes up.
60. I just haven't had the luck in life that others have had.
61. Ideas keep turning over and over in my mind and they won't go away.
62. I've become quite discouraged and sad about life in the past year or two.
63. Many people have been spying into my private life for years.
64. I don't know why, but I sometimes say cruel things just to make others unhappy.
65. I flew across the Atlantic 30 times last year.
66. My habit of abusing drugs has caused me to miss work in the past.
67. I have many ideas that are ahead of the times.
68. Lately, I have to think things over and over again for no good reason.
69. I avoid most social situations because I expect people to criticize or reject me.
70. I often think that I don't deserve the good things that happen to me.
71. When I'm alone, I often feel the strong presence of someone nearby who can't be seen.
72. I feel pretty aimless and don't know where I'm going in life.
73. I often allow others to make important decisions for me.
74. I can't seem to sleep, and wake up just as tired as when I went to bed.
75. Lately, I've been sweating a great deal and feel very tense.
76. I keep having strange thoughts that I wish I could get rid of.
77. I have a great deal of trouble trying to control an impulse to drink to excess.
78. Even when I'm awake, I don't seem to notice people who are near me.
79. I am often cross and grouchy.
80. It is very easy for me to make many friends.

Please go on to the next page

81. I'm ashamed of some of the abuses I suffered when I was young.

82. I always make sure that my work is well planned and organized.

83. My moods seem to change a great deal from one day to the next.

84. I'm too unsure of myself to risk trying something new.

85. I don't blame anyone who takes advantage of someone who allows it.

86. For some time now I've been feeling sad and blue and can't seem to snap out of it.

87. I often get angry with people who do things slowly.

88. I never sit on the sidelines when I'm at a party.

89 I watch my family closely so I'll know who can and who can't be trusted.

90 I sometimes get confused and feel upset when people are kind to me.

91 My use of so-called illegal drugs has led to family arguments.

92. I'm alone most of the time and I prefer it that way.

93. There are members of my family who say I'm selfish and think only of myself.

94. People can easily change my ideas, even if I thought my mind was made up.

95. I often make people angry by bossing them.

96. People have said in the past that I became too interested and too excited about too many things.

97. I believe in the saying, "early to bed and early to rise..."

98. My feelings toward important people in my life often swing from loving them to hating them.

99. In social groups I am almost always very self-conscious and tense.

100. I guess I'm no different from my parents in becoming somewhat of an alcoholic.

101. I guess I don't take many of my family responsibilities as seriously as I should.

102. Ever since I was a child, I have been losing touch with the real world.

103. Sneaky people often try to get the credit for things I have done or thought of.

104. I can't experience much pleasure because I don't feel I deserve it.

105. I have little desire for close friendships.

106. I've had many periods in my life when I was so cheerful and used up so much energy that I fell into a low mood.

107. I have completely lost my appetite and have trouble sleeping most nights.

108. I worry a great deal about being left alone and having to take care of myself.

109. The memory of a very upsetting experience in my past keeps coming back to haunt my thoughts.

110. I was on the front cover of several magazines last year.

111. I seem to have lost interest in most things that I used to find pleasurable, such as sex.

112. I have been downhearted and sad much of my life since I was quite young.

113. I've gotten into trouble with the law a couple of times.

114. A good way to avoid mistakes is to have a routine for doing things.

115. Other people often blame me for things I didn't do.

116. I have had to be really rough with some people to keep them in line.

117. People think I sometimes talk about strange or different things than they do.

118. There have been times when I couldn't get through the day without some street drugs.

119. People are trying to make me believe that I'm crazy.

120. I'll do something desperate to prevent a person I love from abandoning me.

Please go on to the next page

121. I go on eating binges a couple of times a week.

122. I seem to make a mess of good opportunities that come my way.

123. I've always had a hard time stopping myself from feeling blue and unhappy.

124. When I'm alone and away from home, I often begin to feel tense and panicky.

125. People sometimes get annoyed with me because they say I talk too much or too fast for them.

126. Most successful people today have been either lucky or dishonest.

127. I won't get involved with people unless I'm sure they'll like me.

128. I feel deeply depressed for no reason I can figure out.

129. Years later I still have nightmares about an event that was a real threat to my life.

130. I don't have the energy to concentrate on my everyday responsibilities anymore.

131. Drinking alcohol helps when I'm feeling down.

132. I hate to think about some of the ways I was abused as a child.

133. Even in good times, I've always been afraid that things would soon go bad.

134. I sometimes feel crazy-like or unreal when things start to go badly in my life.

135. Being alone, without the help of someone close to depend on, really frightens me.

136. I know I've spent more money than I should buying illegal drugs.

137. I always see to it that my work is finished before taking time out for leisure activities.

138. I can tell that people are talking about me when I pass by them.

139. I'm very good at making up excuses when I get into trouble.

140. I believe I'm being plotted against.

141. I feel that most people think poorly of me.

142. I frequently feel there's nothing inside me, like I'm empty and hollow.

143. I sometimes force myself to vomit after eating.

144. I guess I go out of my way to encourage people to admire the things I say or do.

145. I spend my life worrying over one thing or another.

146. I always wonder what the real reason is when someone is acting especially nice to me.

147. There are certain thoughts that keep coming back again and again in my mind.

148. Few things in life give me pleasure.

149. I feel shaky and have difficulty falling asleep because painful memories of a past event keep running through my mind.

150. Looking ahead as each day begins makes me feel terribly depressed.

151. I've never been able to shake the feeling that I'm worthless to others.

152. I have a drinking problem that I've tried unsuccessfully to end.

153. Someone has been trying to control my mind.

154. I have tried to commit suicide.

155. I'm willing to starve myself to be even thinner than I am.

156. I don't understand why some people smile at me.

157. I have not seen a car in the last ten years.

158. I get very tense with people I don't know well because they may want to harm me.

159. Someone would have to be pretty exceptional to understand my special abilities.

160. My current life is still upset by flashbacks of something terrible that happened to me.

Please go on to the next page

161. I seem to create situations with others in which I get hurt or feel rejected.

162. I often get lost in my thoughts and forget what's going on around me.

163. People say I'm a thin person, but I feel that my thighs and backside are much too big.

164. There are terrible events from my past that come back repeatedly to haunt my thoughts and dreams.

165 Other than my family, I have no close friends.

166 I act quickly much of the time and don't think things through as I should.

167 I take great care to keep my life a private matter so no one can take advantage of me.

168 I very often hear things so well that it bothers me.

169. I'm always willing to give in to others in a disagreement because I fear their anger or rejection.

170. I repeat certain behaviors again and again, sometimes to reduce my anxiety and sometimes to stop something bad from happening.

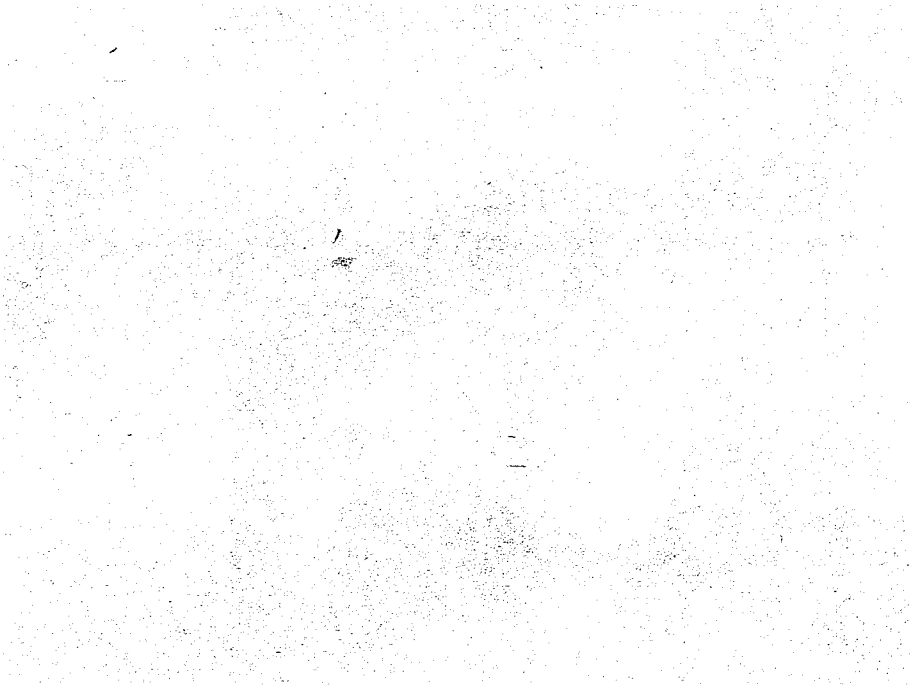
171. I have given serious thought recently to doing away with myself.

172. People tell me that I'm a very proper and moral person.

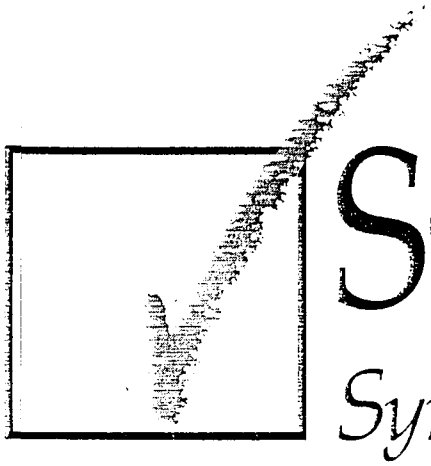
173. I still feel terrified when I think of a traumatic experience I had years ago.

174. Although I'm afraid to make friendships, I wish I had more than I do.

175. There are people who are supposed to be my friends who would like to do me harm.



Appendix 10
Symptom Check List - 90 - R (SCL-90-R)
Derogatis (1977)
Photocopy taken from copyright original



SCL-90-R®

Symptom Checklist-90-R

Leonard R. Derogatis, PhD

Last Name First MI

ID Number

Age Gender Test Date

DIRECTIONS:

1. Print your name, identification number, age, gender, and testing date in the area on the left side of this page.
2. Use a lead pencil only and make a dark mark when responding to the items on pages 2 and 3.
3. If you want to change an answer, erase it carefully and then fill in your new choice.
4. Do not make any marks outside the circles.

DO NOT SEND TO NATIONAL COMPUTER SYSTEMS
USE ONLY FOR HAND SCORING

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INSTRUCTIONS:

Below is a list of problems people sometimes have. Please read each one carefully, and blacken the circle that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Blacken the circle for only one number for each problem and do not skip any items. I you change your mind, erase your first mark carefully Read the example before beginning, and if you have any questions please ask them now.

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	EXAMPLE HOW MUCH WERE YOU DISTRESSED BY:
1	0	1	2	●	4	Bodyaches

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	HOW MUCH WERE YOU DISTRESSED BY:
1	0	1	2	3	4	Headaches
2	0	1	2	3	4	Nervousness or shakiness inside
3	0	1	2	3	4	Repeated unpleasant thoughts that won't leave your mind
4	0	1	2	3	4	Faintness or dizziness
5	0	1	2	3	4	Loss of sexual interest or pleasure
6	0	1	2	3	4	Feeling critical of others
7	0	1	2	3	4	The idea that someone else can control your thoughts
8	0	1	2	3	4	Feeling others are to blame for most of your troubles
9	0	1	2	3	4	Trouble remembering things
10	0	1	2	3	4	Worried about sloppiness or carelessness
11	0	1	2	3	4	Feeling easily annoyed or irritated
12	0	1	2	3	4	Pains in heart or chest
13	0	1	2	3	4	Feeling afraid in open spaces or on the streets
14	0	1	2	3	4	Feeling low in energy or slowed down
15	0	1	2	3	4	Thoughts of ending your life
16	0	1	2	3	4	Hearing voices that other people do not hear
17	0	1	2	3	4	Trembling
18	0	1	2	3	4	Feeling that most people cannot be trusted
19	0	1	2	3	4	Poor appetite
20	0	1	2	3	4	Crying easily
21	0	1	2	3	4	Feeling shy or uneasy with the opposite sex
22	0	1	2	3	4	Feelings of being trapped or caught
23	0	1	2	3	4	Suddenly scared for no reason
24	0	1	2	3	4	Temper outbursts that you could not control
25	0	1	2	3	4	Feeling afraid to go out of your house alone
26	0	1	2	3	4	Blaming yourself for things
27	0	1	2	3	4	Pains in lower back
28	0	1	2	3	4	Feeling blocked in getting things done
29	0	1	2	3	4	Feeling lonely
30	0	1	2	3	4	Feeling blue
31	0	1	2	3	4	Worrying too much about things
32	0	1	2	3	4	Feeling no interest in things
33	0	1	2	3	4	Feeling fearful
34	0	1	2	3	4	Your feelings being easily hurt
35	0	1	2	3	4	Other people being aware of your private thoughts
36	0	1	2	3	4	Feeling others do not understand you or are unsympathetic
37	0	1	2	3	4	Feeling that people are unfriendly or dislike you

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	HOW MUCH WERE YOU DISTRESSED BY:
38	0	1	2	3	4	Having to do things very slowly to insure correctness
39	0	1	2	3	4	Heart pounding or racing
40	0	1	2	3	4	Nausea or upset stomach
41	0	1	2	3	4	Feeling inferior to others
42	0	1	2	3	4	Soreness of your muscles
43	0	1	2	3	4	Feeling that you are watched or talked about by others
44	0	1	2	3	4	Trouble falling asleep
45	0	1	2	3	4	Having to check and double-check what you do
46	0	1	2	3	4	Difficulty making decisions
47	0	1	2	3	4	Feeling afraid to travel on buses, subways, or trains
48	0	1	2	3	4	Trouble getting your breath
49	0	1	2	3	4	Hot or cold spells
50	0	1	2	3	4	Having to avoid certain things, places, or activities because they frighten you
51	0	1	2	3	4	Your mind going blank
52	0	1	2	3	4	Numbness or tingling in parts of your body
53	0	1	2	3	4	A lump in your throat
54	0	1	2	3	4	Feeling hopeless about the future
55	0	1	2	3	4	Trouble concentrating
56	0	1	2	3	4	Feeling weak in parts of your body
57	0	1	2	3	4	Feeling tense or keyed up
58	0	1	2	3	4	Heavy feelings in your arms or legs
59	0	1	2	3	4	Thoughts of death or dying
60	0	1	2	3	4	Overeating
61	0	1	2	3	4	Feeling uneasy when people are watching or talking about you
62	0	1	2	3	4	Having thoughts that are not your own
63	0	1	2	3	4	Having urges to beat, injure, or harm someone
64	0	1	2	3	4	Awakening in the early morning
65	0	1	2	3	4	Having to repeat the same actions such as touching, counting, or washing
66	0	1	2	3	4	Sleep that is restless or disturbed
67	0	1	2	3	4	Having urges to break or smash things
68	0	1	2	3	4	Having ideas or beliefs that others do not share
69	0	1	2	3	4	Feeling very self-conscious with others
70	0	1	2	3	4	Feeling uneasy in crowds, such as shopping or at a movie
71	0	1	2	3	4	Feeling everything is an effort
72	0	1	2	3	4	Spells of terror or panic
73	0	1	2	3	4	Feeling uncomfortable about eating or drinking in public
74	0	1	2	3	4	Getting into frequent arguments
75	0	1	2	3	4	Feeling nervous when you are left alone
76	0	1	2	3	4	Others not giving you proper credit for your achievements
77	0	1	2	3	4	Feeling lonely even when you are with people
78	0	1	2	3	4	Feeling so restless you couldn't sit still
79	0	1	2	3	4	Feelings of worthlessness
80	0	1	2	3	4	The feeling that something bad is going to happen to you
81	0	1	2	3	4	Shouting or throwing things
82	0	1	2	3	4	Feeling afraid you will faint in public
83	0	1	2	3	4	Feeling that people will take advantage of you if you let them
84	0	1	2	3	4	Having thoughts about sex that bother you a lot
85	0	1	2	3	4	The idea that you should be punished for your sins
86	0	1	2	3	4	Thoughts and images of a frightening nature
87	0	1	2	3	4	The idea that something serious is wrong with your body
88	0	1	2	3	4	Never feeling close to another person
89	0	1	2	3	4	Feelings of guilt
90	0	1	2	3	4	The idea that something is wrong with your mind

Appendix 11
Detailed scoring information for measures used in the study

Detailed Scoring Information for the Measures Used in the Study

Wessex Dissociation Scale (WDS)

The WDS is scored on a six point Likert-type rating scale where; 0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often, 5 = all the time No items are reverse scored.

The subscales and total measure score are calculated as follows;

Level 1 (automatic functions)

Add the appropriate frequency endorsement (0, 1, 2, 3, 4, or 5) for items 1, 2, 4, 7, 22, 34, and 38. Divide the resulting score by 7.

Level 2 (within-mode dissociation)

Add the appropriate frequency endorsement (0, 1, 2, 3, 4, or 5) for items 9, 13, 15, 16, 17, 19, 20, 23, 33, 35, 37, and 40. Divide the resulting score by 12.

Level 3 (between-mode dissociation)

Add the appropriate frequency endorsement (0, 1, 2, 3, 4, or 5) for items 3, 5, 6, 8, 10, 11, 12, 14, 18, 21, 24, 25,26, 27, 28, 29, 30, 31, 32, 36, and 39. Divide the resulting score by 21.

Total WDS score

Add the appropriate frequency endorsement (0, 1, 2, 3, 4, or 5) for all items. Divide the resulting score by 40.

If items have been missed out or double marked, divide the sum of the subscale items by the number of items which have been correctly answered. This provides an average score for each subscale and the total WDS.

Dissociative Experiences Scale-II (DES-II)

The DES-II is a report of the percentage of time that individuals have the experiences described. Percentages of 0 to 100 are represented on a response scale with increments of ten. This is a development from the DES I which used a visual analogue response scale. Increments of 10 in the DES II make scoring simpler. The responses for the 28 items are summed, and divided by 28 to produce an average score. If items are missing or double marked, in this study an average was used (i.e., the summed responses were divided by the number

of correctly answered items rather than 28). No items in this measure are reverse scored.

In addition to the DES total score, the taxon measure of pathological dissociation (the DES-T) was calculated. This subscale consists of 8 items (items 3, 5, 7, 8, 12, 13, 22, and 27). The percentage responses are summed and divided by 8 to produce an average DES-T score. As with the total scale, in this study, when items were double marked or missing an average was used (i.e., the sum of responses was divided by the number of correctly answered responses).

Child Abuse and Trauma Scale (CATS)

Participants respond on a five point Likert-type scale indicating frequency of experiences where;

0 = never, 1 = rarely, 2 = sometimes, 3 = very often, 4 = always.

There are 5 items which are reverse scored (items 5, 18, 22, 23, and 24). For these items the scoring is as follows;

4 = never, 3 = rarely, 2 = sometimes, 1 = very often, 0 = always

The four subscale scores are calculated as follows;

Sexual Abuse

Add the appropriate frequency endorsement (0, 1, 2, 3, or 4) for items 9, 13, 15, 26, 29, and 35. Divide the resulting score by 6.

Punishment

Add the appropriate frequency endorsement (0, 1, 2, 3, or 4) for items 4, 5, 6, 18, 24, and 34. Divide the resulting score by 6. NOTE: This scale contains reverse scored items.

Neglect/Negative Home Atmosphere

Add the appropriate frequency endorsement (0, 1, 2, 3, or 4) for items 2, 3, 7, 10, 11, 14, 16, 19, 27, 30, 31, 33, 36, and 38. Divide the resulting score by 14.

Emotional Abuse

Add the appropriate frequency endorsement (0, 1, 2, 3, or 4) for items 1, 8,19, 20, 25, 28, and 32. Divide the resulting score by 7.

The total score is also to be noted as items not identified in subscales do

contribute to this score (items 12, 17, 21, 22, 23, and 37). This total is calculated by adding scores for all items and dividing by 38. NOTE: This scale contains reverse scored items.

In this study, if items have been missed out or double marked, the sum of the subscale or total scale items has been divided by the number of items which have been correctly answered. This provides an average score for each subscale and the total.

MCMI-III

The MCMI-III has a complicated scoring system for which the handscoring booklet and manual is needed, or alturnatively a computer scoring service is available.

The handscoring steps are as follows;

1. Validity Check - there are three questions (items 65, 110, and 157) for which 1 point is given for a "true" response. If the sum of the responses is 1 the profile has questionnable validity. If the sum is 2 or 3 the profile is not valid.
2. Raw Scores - Raw scores are computed by adding weighted scores (1 or 2) for "true"or "false" responses according to the scoring keys. Subscale items and weightings are detailed in the test manual (Millon, 1994).
3. Scale X Raw Score - This is calculated by summing raw scores for scales 1 - 4, 6a - 8b and scale 5 x 0.6667.
4. Base Rate Scores - Using base rate conversion tables (separate tables for males and females) the raw scores are converted to standardised scores.
5. Disclosure Adjustment - Using a table from the scoring book, the X raw score is used to calculate this adjustment.
6. Anxiety/Depression Adjustment - This adjustment is based on scales A and D.
7. Inpatient Adjustment - This was not used in the present study as participants were recruited from psychology services providing for outpatients.

8. Denial Compliant Adjustment - If scales 4, 5, or 7 are the highest of the clinical personality patterns subscales, an adjustment of 8 is made to the highest.

9. Final Scores - Once all adjustments have been made, the final base rate scores are calculated to provide the profile.

SCL-90-R

Participants respond on a five point Likert-type scale indicating how much a described problem has distressed or bothered them within the stated timescale where;

0 = Not at all, 1 = A little bit, 2 = moderately, 3 = Quite a bit, 4 = Extremely.

The subscales (symptom dimensions) are calculated as follows;

Somatization

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 1, 4, 12, 27, 40, 42, 48, 49, 52, 53, 56, and 58. Divide the resulting score by 12.

NOTE: In all the symptom dimensions the score is divided by the number of endorsed items in that dimension. If an item is double marked or missed the average of correctly answered items is used.

Obsessive-compulsive

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 3, 9, 10, 28, 38, 45, 46, 51, 55, and 65. Divide the resulting score by 10.

Interpersonal sensitivity

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 6, 21, 34, 36, 37, 41, 61, 69, and 73. DIvide the resulting score by 9.

Depression

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 5, 14, 15, 20, 22, 26, 29, 30, 31, 32, 54, 71, and 79. Divide the resulting score by 13.

Anxiety

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 2, 17, 23, 33, 39, 57, 72, 78, 80, and 86. Divide the resulting score by 10.

Hostility

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 11, 24, 63, 67, 74, and 81. Divide the resulting score by 12.

Phobic anxiety

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 13, 25, 47, 50, 70, 75, and 82. Divide the resulting score by 6.

Paranoid Ideation

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 8, 18, 43, 68, 76, and 83. Divide the resulting score by 6.

Psychoticism

Add the appropriate values for item responses (0, 1, 2, 3, or 4) for items 7, 16, 35, 62, 77, 84, 85, 87, 88, and 90. Divide the resulting score by 10.

There are also three global indices which are calculated as follows;

Global severity index

Add appropriate response values (0, 1, 2, 3, or 4) for all items. Divide the resulting score by 90(or in the case of missing data, by the number of endorsed items).

Positive Symptom total

Count the number of item endorsed with 1, 2, 3, or 4 (not those scoring 0).

Positive symptom distress index

Add appropriate response values (0, 1, 2, 3, or 4) for all items. Divide the resulting score by the positive symptom total.

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