The Role of Threat in Triggering

Dissociation in Bulimic Disorders

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CONTENTS

Figures

Tables and Graphs

ACKNOWLEDGEMENTS

ABSTRACT

Background: Dissociation is commonly found as a trait in women with bulimic disorders, where it appears to serve the function of lowering awareness of generalised threat and negative self-esteem. This experimental study assesses whether dissociation is a reactive state in bulimic women, as well as a trait. This study tests the hypothesis that threat cues will trigger dissociation within a bulimic population. The literature indicates that activation of negative affect (especially related to the activation of abandonment schemas) is related to levels of bulimic pathology and to the triggering of symptoms. A second hypothesis examined the impact of threat on state affect.

Methods: Participants were 24 bulimic and 26 non-clinical women. Each completed the Eating Disorders Inventory (EDI) and the Dissociative Experiences Scale (DES-II), and was exposed to a subliminal neutral cue and a subliminal threat cue (order counterbalanced). After each cue, they completed the subjective component of the Clinician-Administered Dissociation Scale (CADSS) and a measure of anxiety and mood (Hospital Anxiety and Depression Scale – HADS).

Results: The subliminal threat cue had no effect on the non-clinical group, but the threat cue significantly increased state dissociation (particularly derealisation levels) in the bulimic women. There was no impact on mood. There were no significant associations of dissociative reactivity with trait dissociation or with any aspect of eating pathology.

Discussion: In the bulimic eating disorders, state dissociation is particularly susceptible to the impact of threat cues, even when they are presented below the level of conscious awareness. This finding might explain a number of clinical phenomena, including difficulties in the therapeutic relationship. Future research is needed to extend this finding.

CHAPTER 1

1.0. Introduction

The introduction will trace a path through the literature in each of the three main areas considered in this project - bulimia, dissociation and negative affect. Bulimia and then dissociation will be considered first, before examining the links between them. Negative affect will then be introduced (in the context of schema theory), followed by a discussion of its relevance to bulimia. The topic of schema activation will then be addressed, making specific reference to subliminal processing. Finally, these themes will be integrated in the context of theories, models and gaps in the research, leading to the presentation of this project's aims and hypotheses.

1.1 Bulimia

The majority of research covered in the following literature review concerns populations with bulimia nervosa or undifferentiated groups of bulimics. This second group also includes diagnoses such as anorexia of the binge-purge subtype and eating disorders not otherwise specified (EDNOS - such as binge-eating disorder). The unit of analysis in the present study will be the behaviour of bingeing, as opposed to a specific diagnosis. Therefore, what follows is an introduction to bulimic disorders, although it concentrates on bulimia nervosa (which has the greatest coverage in the literature to date). Many of the fundamental characteristics are shared with the other bulimic disorders, but differences are highlighted wherever necessary. Generally the term bulimia will refer to bulimic disorders as a whole, as opposed to bulimia nervosa specifically.

Bulimia nervosa is one of the family of eating disorders characterised by "gross disturbances in eating behaviour and...extreme concerns about shape and weight" (Fairburn & Cooper, 1996). This pattern of behaviour also refers to the other bulimic disorders specified above. It has been argued (Schlundt & Johnson, 1990) that bulimia and anorexia nervosa are two different forms of a single disorder, focusing primarily on a fear of gaining weight. Certainly, there are many similarities between the two disorders, and around a quarter of bulimic patients have had anorexia in the past (Agras, Walsh, Fairburn, Wilson, & Kraemer, 2000). The distinguishing characteristics of bulimia (as defined by DSM-IV; American Psychiatric Association, 1994) are 'recurrent episodes of binge-eating' and 'recurrent inappropriate compensatory behaviours (used) in order to prevent weight gain.' However, if these behaviours occur in the context of low weight, then a diagnosis of anorexia nervosa (binge/purge subtype) is made instead. A diagnosis of bulimia nervosa can be made when a pattern of binge eating followed by compensatory behaviours occurs on average twice a week for 3 months.

The two criteria for a binge are:

- Eating, in a discrete period of time (e.g., within any two-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.

- A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).

Binge-eating as a concept is somewhat subjective, and the amount of food seems to be less important in defining it than the quality (i.e., types) of food involved and the perceived loss of control. Triggers, as will be discussed in greater depth, include life stressors, hunger, and mood states.

Individuals with bulimia respond to binges with a range of compensatory behaviours, including laxatives, diuretics, enemas and thyroid medication (Mizes, 1985; Schlundt & Johnson, 1990; Walsh & Garner, 1997). However, the most frequently used (by around 80% of bulimia nervosa patients) is self-induced vomiting. Those using these behaviours can be classified as purging bulimics, but there is also a non-purging subtype, which involves engaging in behaviours with similar intended end-points, such as excessive exercise and fasting (Barlow & Durand, 1999; Walsh & Garner, 1997).

Binge-eating disorder, the best-known subset of the EDNOS category, is defined as above, but is differentiated by the absence of the extreme weight-control or compensatory behaviours associated with bulimia nervosa. Three or more of the following criteria are also required for a diagnosis:

- Eating much more rapidly than normal

- Eating until feeling uncomfortably full

- Eating large amounts of food when not feeling physically hungry

- Eating alone because of feeling embarrassed about how much one is eating

- Feeling disgusted with oneself, depressed, or very guilty after overeating.

As with other bulimic disorders, marked distress accompanies the binge-eating. Binge-eating disorder also has different frequency criteria, with two days per week for six months being the threshold for diagnosis.

Other EDNOS presentations relevant to this study include: less frequent or prolonged bingeing and/or use of compensatory mechanisms than the DSM-IV criteria require; and repeated chewing and spitting out of food without swallowing.

1.1.1   Comorbidity and Prevalence

As with the other eating disorders, bulimia is often associated with a large degree of comorbid pathology (both DSM-IV Axis I & II disorders). Depression, anxiety, substance abuse and personality disorders have all been seen in conjunction with bulimia nervosa (e.g., Braun, Sunday, & Halmi, 1994; Herzog, Rathner, & Vandereycken, 1992). Other clinical characteristics include negative body experience, impulsivity, aggressiveness, dissociative experiences, increased suggestibility, and history of trauma and abuse (Vanderlinden & Vandereycken, 1997).

Bulimia nervosa is a great deal more common than anorexia nervosa among adults, and point prevalence for adolescent and young adult females ranges from 1-4% (e.g., Hoek, 2002; Waller 2002). Men are far less frequently diagnosed with eating disorders than women (Lundholm & Anderson 1986), due to a mix of different sex role socialisation and pressures (Polivy, Herman, Hackett, & Kuleshnyk, 1986) and a tendency to under-report (Pope & Hudson 1986). Prevalence is lower among older female populations (0.4-2%) (e.g., Bushnell, Wells, Hornblow, Oakley-Browne, & Joyce, 1990). Attitudes often associated with eating disorder clients are also relatively common in non-clinical populations, and prevalence rates of bulimic symptoms have been recorded as high as 19% in certain in college samples (Garfinkel, 1995). Prevalence rates for binge-eating disorder range from 2-3% in the normal adult population to 8% of obese samples (Grilo, 2002). Unlike other bulimic disorders, there is a more equal distribution across the genders, with a ratio of 1.5 women to each man (e.g., Grilo, 2002). Atypical eating disorder presentations account for a large proportion (20-61%) of patients (Grilo, 2002). However, within this group are many non-bulimic presentations as well as bulimic ones.

1.1.2   Medical Complications

In addition to the psychological complications inherent in the eating disorders, there are significant medical sequelae, which can need frequent monitoring and can even be life-threatening. In bulimia nervosa, electrolyte imbalances (in particular, potassium deficiencies) from purging and dieting can lead to cardiac arrhythmia (Barlow & Durand, 1999). Fluid imbalances and oedema often result in kidney dysfunction (Pomeroy, 1996), and there is a wealth of other problems concerning the reproductive organs, the brain, the thyroid and the liver that can be consequences of the bulimic's dieting and purging behaviours (Pomeroy & Mitchell, 2002).

1.1.3   Aetiology – theories

The possible causes and contributors to eating psychopathology are numerous, and can be divided into distal and proximal antecedents. Theories of maintenance attempt to incorporate elements of these two phenomena in order to demonstrate how the disorder is perpetuated over time.

1.1.3.1 Distal antecedents. These can be divided into cultural, familial, biological, interpersonal and psychological factors. It must be noted, however, that there is no strong evidence that supports these risk factors as being specific to the eating disorders. Additionally, it is important to be careful when inferring causality, as some of these factors may have a role more akin to moderators or mediators. With regard to the current study, this is the area where schemas or core beliefs are formed. Only a brief introduction to these factors will be presented here. A fuller discussion (and models relating these factors to schema theory) will be addressed in subsequent

sections.

- Cultural antecedents include societal and cultural influences. For example, the media portray a culture (predominantly in the West, but gradually becoming global) obsessed with thinness, equating it with power, efficacy, happiness and attractiveness. Peer influences and striving to do well at school can also be contributory.

- Familial antecedents include attachment patterns, parental styles in early childhood, family functioning (including marital conflict), and interaction patterns in the face of growing up. For example, Cooper & Fairburn (1986) reported that almost a third of all bulimic patients' first-degree relatives had sought psychiatric help. Waller (1994) found a link between bingeing severity and poor patterns of family interaction (such as poor problem-solving and low cohesion).

- Biological antecedents include genetic factors. There is evidence from twin studies for some genetic contribution to familial liability. There is also cross-transmission of anorexia nervosa and bulimia in families of probands, and significantly higher rates of both disorders than in the general population (Strober & Bulik, 2002).

- Interpersonal antecedents include abuse and neglect, as well as social triggers to bulimic behaviours (e.g., Steiger, Gauvin, Jabalpurwala, Seguin, & Stotland, 1999, Vanderlinden & Vandereycken, 1997).

- Psychological antecedents focus on the development of factors such as self-worth, locus of control, and perfectionism (e.g., Lacey, 1986; Pope & Hudson, 1992; Striegel-Moore, 1993; Waller, 2002).

1.1.3.2 <u>Proximal antecedents.</u> The literature in this area is divided into two areas.

One camp suggests that binges in eating disorders are driven primarily by physiological states, such as hunger and starvation: the other argues that affective state leads to bingeing. For example, Lacey (1986) outlined proximal antecedents (immediate triggers) to the onset of binge-eating, and found that many bulimic patients had experienced life events relating to loss, sexual conflicts or major change. These correspond to possible threats to fragile egos and identities. In contrast, Fairburn & Cooper (1996) stress the importance of starvation states in binge-eating.

Bulimia patients report that socially-driven emotional states (such as loneliness, anxiety, anger, boredom, and (to a lesser extent) depression) lead to binges more often than pure hunger does (Johnson & Larson, 1982). It has been argued (McManus & Waller, 1995) that affect and starvation might not be discrete factors, but that there is a functional shift across different stages of the disorder. For example, in the early stages, hunger and starvation may trigger binges. However, as the patient experiences the affective blocking function of bingeing (addressed in further detail in subsequent sections), affective reasons for bingeing come to take precedence. Indeed a combination of the two may have the largest effect on eating psychopathology.

1.1.3.3. <u>Maintenance models.</u> These different models have generated two broad theories of the maintenance of bulimia. Starvation models focus on binge eating as a result of physiological and psychological susceptibility, stemming from dietary reductions. Fairburn's models (Fairburn, 1997; Fairburn, Cooper, & Shafran, 2003) suggest that the core of poor self-esteem is based on evaluating self-worth on the basis of weight, shape and control over eating habits. 'Fatness' is avoided at all costs, and the importance of controlling weight translates into highly exacting dietary regimes, accounting for many of the compensatory behaviours (such as vomiting and exercising). Physical starvation leads to cravings, and thus to an almost inevitable loss

of control over strict dieting. This failure is seen by the bulimic as evidence of a lack of self-control (and hence low self-worth). The binge, while temporarily reinforcing (in that it satisfies hunger), feeds back into negative beliefs about shape and weight, and ultimately into poor self-esteem. This model is summarised in Figure 1.
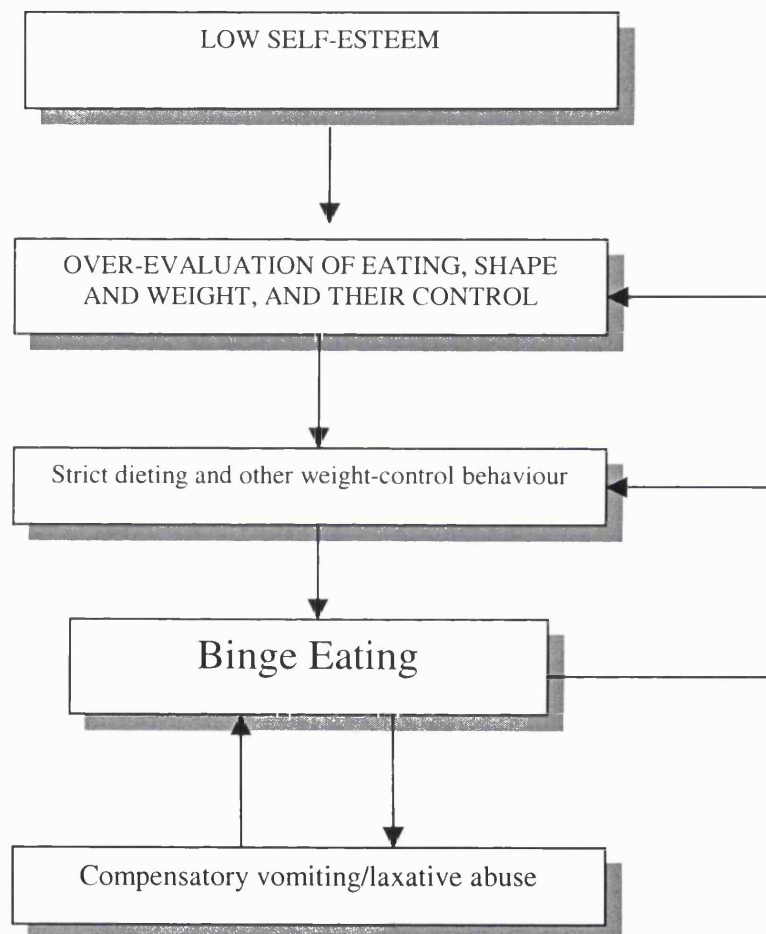
Figure 1. A schematic representation of the cognitive-behavioural theory of the maintenance of bulimia nervosa (modified from Fairburn et al 1993)

Evidence for the model in Figure 1 comes from information processing studies which indicate that women with bulimic attitudes and disorders have highly developed cognitive representations of food- and weight-related information (Channon, Helmsley & de Silva, 1988; Cooper & Todd, 1997). Further support comes from research showing that cognitive behavioural therapy (CBT) for bulimia

nervosa, which is specifically targeted at the mechanisms in the model, has been shown to be the best available treatment to date (Fairburn et al., in press).

Fairburn et al. (2003) have recently suggested four additional factors in the maintenance of bulimia, intended as adjuncts to (rather than a replacement for) his existing, and well-supported theory. They are as follows:

- **Clinical perfectionism** - over-evaluation of self-worth on the basis of achieving goals and success (as well as on weight, shape and control as in the standard model).

- **Core low self-esteem** - an extension of the existing weight and food-related self-esteem, and is described as being pervasive, unconditional and permanent.

- **Mood intolerance** - an inability to cope appropriately with emotional states such as anger, depression and anxiety. As a result, alternative coping mechanisms such as bingeing, purging, self-injury or psychoactive substances serve to modify or blunt toxic affect.

- **Interpersonal difficulties** have impact on self-esteem, control, family dynamics and perceptions of weight, shape and food, and therefore might be said to have a mediating effect on the maintenance of bulimia. The original Fairburn (1989) model makes little reference to patients' relationships and circumstances. However, studies of treatment efficacy have repeatedly found that IPT (interpersonal psychotherapy) has as good an outcome as CBT (Agras et al., 2000), and yet focuses entirely on relationships without mentioning weight or food-related issues.

In summary, starvation models of bulimia are well-supported by the success of CBT treatments based on the model, but can be considered necessary but not sufficient in explaining bingeing behaviour as a whole. Frequently cited criticism of

this method of formulation comes from observations that not all binge eaters have a prior history of starvation, and that bingeing does not cease when the individual is no longer starving. Moreover, more than 50% of bulimics cite emotional antecedents to their binges as opposed to appetitive ones (Grilo, Shiffman, & Carter-Campbell, 1994).

Affect-driven models of bulimia will be discussed further below, in association with literature pertaining to negative affect, schema theory and dissociation (see section 1.5.1.).

1.1.4   Current treatment

Treatments for bulimia have developed since early attempts, which included blood-letting, internal administration of ice, crude mercury, iron filings, powders made from crushed shells, and brandy (Parry-Jones & Parry-Jones, 1991).

1.1.4.1 Cognitive Behaviour Therapy (CBT). Currently, the best-established treatment model for bulimia nervosa and binge eating disorder is cognitive behavioural therapy, based on Fairburn's work (1981, 1997). There are two main phases of treatment. The first concentrates on helping the patient to interrupt the cycle of bingeing and vomiting, to achieve dietary stability and exposure to the anxiety of eating normally. There is a psycho-educational component, and considerable importance is placed on self-monitoring. Homework focuses on stabilising eating patterns and carrying out behavioural experiments. In the second phase, the monitoring is used to determine the triggers of maladaptive eating behaviour. Traditional cognitive restructuring and challenging techniques are used to counter dysfunctional beliefs around weight and efficacy, and alternative coping strategies are

introduced. The patient is gradually exposed to their 'forbidden foods' in order to demonstrate how control and weight can be maintained without the rigid dietary regimes previously employed.

1.1.4.2 <u>Interpersonal Psychotherapy (IPT)</u> IPT has also been shown to be effective in the treatment of bulimia nervosa and binge eating disorder (Agras et al., 2000). The goal of IPT is to help patients identify and resolve problems in current interpersonal relationships. It does not deal with any eating behaviours or attitudes. Fairburn et al. (in press) have attempted to explain its efficacy as the result of a number of factors. Interpersonal difficulties are recognised as triggering and maintaining factors in bulimia, and any resolution of these relationships would be of benefit to the patient. It is hypothesised that success in the interpersonal domain, as a result of new interpersonal opportunities advocated in IPT, allows the individual to shift from evaluating self-esteem on the basis of shape and weight to basing it on interpersonal aspects of life. A new degree of control in one's relationship sphere may also reduce the need to control dietary intake and shape. IPT's focus on roles is also useful, considering that bulimia often has its origins in a time when the patient is negotiating the passage from adolescence and early adulthood.

<u>Psychodynamic psychotherapy.</u> Psychodynamic approaches to the treatment of bulimia have considerable anecdotal support, but little empirical evidence (Waller, 2002). Many of the ideas in psychodynamic theory seem useful when considering formulation, as well as transference and countertransference in therapy. For instance, object relations theory focuses on difficulties in the separation/individuation phase. Family dynamics are integral to the approach, especially the balance between

intrusion, abandonment and control in the relationship between the bulimic and her mother. Pertinent to the current study is the dissociation or splitting off of aggressive or aggrieved feelings, which manifest themselves as the patient's bulimic symptoms (Fallon & Bunce, 2000).

1.1.4.4. Treatment effectiveness. With regards to what works for whom, it has been postulated, (Meyer, Waller & Waters, 1998) that where the aetiology appears to centre on the starvation-bingeing cycle, CBT is likely to be the most effective approach. However, if the core of the problem is affect-driven, more complex therapies (such as schema focused CBT) would be more appropriate (Kennerley, 1997). A more detailed discussion of schema focused CBT will be presented (in conjunction with schema theory) in the relevant section (1.4).

In terms of treatment trials comparing the more frequently used approaches, it has been found consistently that CBT and IPT are the treatments of choice (assuming that they are appropriately practised). When compared with antidepressant medication (pharmacological treatment for bulimia), CBT is superior to medication. CBT and medication are significantly superior to medication alone. CBT and medication are only marginally better than CBT alone (Agras et al., 1992; Fichter, Liebl, Rief, Brunner, Schmidt-Auberger, & Engel, 1991; Leitenburg, Rosen, Wolf, Vara, Detzer, & Srebnik 1994). Agras et al. (2000) and Fairburn, Norman, Welch, O'Connor, Doll, & Peveler (1995) conducted two studies that make direct comparison between behavioural therapy, CBT and IPT. At the end of treatment, CBT was superior to IPT. However, at one-year and long-term follow up, IPT and CBT had equivalent therapeutic benefits. Both were significantly superior to the behavioural treatment. CBT and IPT are used in the treatment of Binge Eating Disorder as in

bulimia nervosa, but with minor alterations such as greater emphasis on the promotion

of the acceptance of a larger than average body size (Wilfley, 2002).

A stepped care (see Fig 2) package of treatment traces a patient's care from

assessment, motivational enhancement and guided self-help, through treatments

outlined above to more long-term packages for complex cases which can include in-

patient stays and psychodynamic work. This approach, while appearing clear and

economical, has the drawback of a high drop-out rate (Waller, 2002).

Figure 2: Stepped Care for Bulimia Nervosa:

(Schematic representation: patients who do not achieve recovery at any treatment stage would proceed to the next step)

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        ┌─────────────────────────────────────┐
        │   Assessed: meets diagnostic criteria for
        │            bulimia nervosa
        └─────────────────────────────────────┘
                          │
        ┌─────────────────────────────────────┐
        │        Motivational enhancement      │
        └─────────────────────────────────────┘
                          │
                          ▼
        ┌─────────────────────────────────────┐
        │           Guided self-help           │
        └─────────────────────────────────────┘
                          │
                          ▼
        ┌─────────────────────────────────────┐
        │     Cognitive-behavioural therapy    │
        └─────────────────────────────────────┘
                          │
                          ▼
        ┌─────────────────────────────────────┐
        │  Extended Cognitive-behavioural therapy or
        │          interpersonal therapy
        └─────────────────────────────────────┘
                          │
                          ▼
        ┌─────────────────────────────────────┐
        │   Medication plus psychological therapy
        └─────────────────────────────────────┘
                          │
                          ▼
        ┌─────────────────────────────────────┐
        │  Other therapies (eg. psychodynamic, and/or
        │          in-patient treatment)
        └─────────────────────────────────────┘
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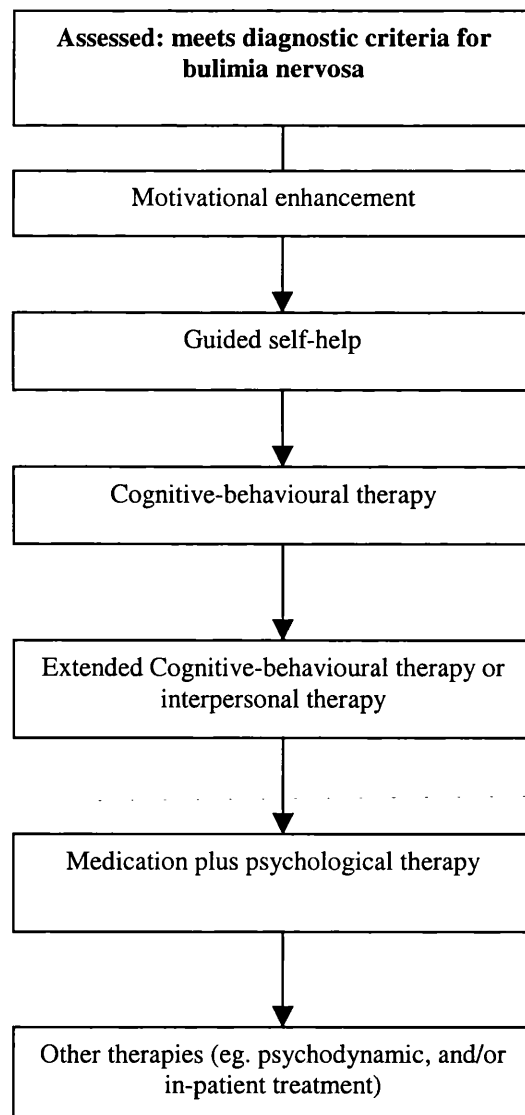
The treatment of anorexia of the binge-purge subtype is both under-researched and consequently variable in its success. CBT, schema-focused CBT and psychodynamic approaches have been attempted (Fairburn & Walsh, 2002).

1.2. Dissociation

1.2.1   History

The construct of dissociation was first outlined over a hundred years ago by the French psychiatrist and philosopher, Pierre Janet (1889). His work forms the basis of our current understanding of dissociation. He identified dissociation as the common mechanism underlying hysteria, which at that time was a broad term encompassing disorders such as post-traumatic stress disorder (PTSD), borderline personality disorder and dissociative disorders. From his work with patients under hypnosis, Janet described dissociation as the "intrapsychic consequences of trauma" (Janet, 1889). He said that dissociation occurs when "certain pathological contents of consciousness operate independently, (and) completely split off from the conscious personality" (Janet, 1925). With the death of his mentor, Charcot, and the onset of World War One, hypnosis became 'unfashionable' and was replaced by the psychoanalytic works of Freud.

Until the late 1970's, Janet's work and the concept of dissociation remained ignored and forgotten. However, work on PTSD, multiple personality disorder (MPD – now known as dissociative identity disorder) and hypnosis brought Janet's theories back to the fore. Hilgard reformulated Janet's dissociation not as a pathological process, but as being on a continuum with normal cognitive functioning. His neo-

dissociation theory (Hilgard, 1977) characterises consciousness as having an 'executive function', monitoring and dictating which cognitive operations are open to consciousness and which are dissociated. An event or experience that has been dissociated has (for whatever reason) had attention and awareness removed from it by the executive function. This degree of integrating what is held in consciousness (and what is dissociated away) is normally successfully implemented, but can be altered in hypnosis and in disordered states.

1.2.2   Conceptualisations of dissociation

Dissociation is described by DSM-IV (American Psychiatric Association, 1994) as "a disruption in the usually integrated functions of consciousness, memory, identity or perception of the environment". Five fundamental characteristics of dissociation are cited: **amnesia, identity disturbance,** and **disturbances or alterations in consciousness** often leading to feelings of **depersonalisation** or **derealisation**. Dissociative experiences vary from common phenomena (e.g., daydreaming, automatic driving) through to severe functional and clinical features (e.g., hallucinations, post-traumatic flashbacks, dissociative identity disorder). Other relevant DSM-IV disorders include: dissociative amnesia (where there is significant memory loss for periods of time ranging from hours to years); dissociative fugue (which involves the loss of knowledge of one's identity and the assumption of another); depersonalisation disorder (where the person experiences feelings of persistent detachment from both self and reality); and dissociative disorders not otherwise specified (a mix of dissociative symptoms that do not fully fit any of the above profiles).

There is much debate as to whether pathological dissociation is better

understood as a qualitatively different set of experiences (Janet, 1925; Waller, Putnam, & Carlson, 1996) or as an extension of a normative continuum (Hilgard, 1974, 1977; James, 1983; Prince, 1978). Van der Hart, Van der Kolk, & Boon, (1996) propose that pathological dissociation can be divided into three types. Primary dissociation describes the process whereby only part of an experience is properly integrated. Alternatively (Nijenhuis & van der Hart 1999), events are experienced as isolated from the individual (as in flashbacks). Secondary dissociation involves the processing of an event without its affective or emotional components. Tertiary dissociation refers to the development of separate ego-states or identities, each with their own individual affective and cognitive material. Communication between states and awareness of the other states is limited or completely absent. Nijenhuis, Spinhoven, Van Dyck, Van der Hart, & Vanderlinden (1998) have identified another form - somatoform dissociation. This can be defined as a failure to integrate the somatic components of an experience (Nijenhuis et al., 1998).

1.2.3   Prevalence

Non-pathological dissociation or dissociative experiences (such as daydreaming and 'tuning out') are not uncommon in the general population. Ross (1991) found rates as high as 11%, with levels declining with age. In clinical populations, dissociative disorders are frequently missed, but prevalence rates of 15-27% have been reported among psychiatric patients from a range of diagnostic categories (Saxe et al., 1993; Putnam & Trickett, 1993). Torem (1987) found that 73% of his bulimic sample scored high on dissociation scales. Anderson, Yasenik, & Ross (1993) found that 88% of survivors of childhood sexual abuse reported dissociative experiences.

1.2.4 Relationship with trauma

Severe childhood trauma is often cited as important in the aetiology of dissociation (Putnam, 1989). Furthermore, Spiegal, Koopman, Cardena, & Classen (1996) state that dissociation is a risk factor for developing further pathology, and for being re-victimised. Impulsivity and associated behaviours (including symptom patterns such as bulimia, self-harm and substance abuse) are also closely allied to dissociation (Vanderlinden & Vanderycken, 1997). Waller et al. (2000) show that somatoform dissociation is more strongly linked to contact-oriented forms of abuse (sexual, physical) than to other kinds of trauma.

1.2.5 Adaptive functions of dissociation

The mechanism of dissociation has "great individual and species survival value" (Ludwig, 1983), serving the primary function of lessening the impact of distressing events or "overwhelming traumatic experience". Blocking out traumatic events from consciousness enables individuals to carry on their lives, functioning as normal. This is rewarding in itself, but dissociation is associated with reduced stress, anxiety and pain levels (Ludwig, 1983). At an extreme level, dissociative identity disorder patients (often victims of rape and sexual abuse) have been found maintain a low level of psychosexual disturbances because they keep traumatic material away from the central personality, using separate dissociated personalities (Coons & Milstein, 1986).

Ludwig (1983) presented seven major functions of dissociation. The automatisation of behaviours describes the ability to perform habitual and learned behaviours with the minimum of conscious control as freeing up cognitive space.

Driving a car on 'automatic pilot' would be a common example of this in practice. Economy and efficiency is closely allied to this, and involves the compartmentalisation of information and skills for greater focus on the task in hand. Dissociation also provides resolution of irreconcilable conflicts. Inherent in this is 'trance logic' – where rational and critical judgement is withheld. This process allows normally contradictory or paradoxical information to be tolerated, and even morally reprehensible actions are permitted. Escape from the constraints of reality is employed by cultures where a relaxing of 'reality' can have therapeutic or community-bonding effects. Connected to this is the enhancement of 'herd sense'. Group dynamics and social cohesiveness behind a leader or an ideal is aided by a sense of depersonalisation (e.g., the army). Similarly, dissociation in tribal dances or religious festivities may facilitate the cathartic discharge of feelings such as anger, longings or sexual tension, through a lowering of inhibition or superego censure. Finally, isolation of catastrophic experiences describes the shelving of emotionally shattering experiences that, if processed immediately, would have severe consequences for the individual's mental health.

1.2.6   When dissociation becomes maladaptive

Dissociation can be a useful response to severe external and ego-threats. However, the defence can be over-utilised when it becomes the individual's primary coping strategy against more everyday stressors (Putnam, 1989). Dissociation can therefore be viewed as maladaptive when its deployment is to the detriment of more mature coping strategies.

Goldberg (1995) suggests that adaptive dissociation involves the interception of overwhelming threat from the outside by the senses. The mind is withdrawn from

the 'sensorium', and danger is brought under control by virtue of being 'outside'. However, the withdrawal from the sensorium results in an uncomfortable dislocation from a sensual reality, and a hasty pseudo-reintegration. This pseudo-reconnection and the withdrawal from the sensorium explain some of the symptoms of maladaptive dissociation, (e.g., inauthenticity of experience, depersonalisation, derealisation, out-of-body experiences, amnesia, fugue, perceptual distortions). Van der Kolk, McFarlane & Weisaeth (1996) describe other negative aspects of dissociation, including a disturbance in identity, basic trust in others, relationship difficulties and interpersonal hypersensitivity. Of course, the definition of maladaptive dissociation includes any dissociative features that cause actual or functional distress.

1.2.7. Clinical presentation and treatment of dissociation

The following section discusses the clinical manifestations of dissociation and current approaches to treatment. Measures are introduced in addition to the induction of dissociation for the purposes of research.

1.2.7.1. Identification of dissociation in clinical settings.

Clinicians report a variety of outward signs that can alert them to the fact that the patient could be dissociating (Kennerley, 1996). These include 'spacing out' and becoming inaccessible for short periods, remembering nothing about the session, sudden mood changes, repetitive movements, vivid flashbacks, and shifting to an alternate personality. Dissociative reactions can also be delayed. For example, the patient might return home after the session and self-harm. Waller et al. (2000) report that dissociative processes can be a significant factor in the difficulty of treating complex cases. Vanderlinden & Vandereycken (1997) suggest that dissociation is at

the core of the comorbidity of substance misuse, bulimia and other impulsive behaviours.

1.2.7.2. Treatment of dissociation. Managing dissociation is challenging, but can be separated into three stages. These are the identification of triggers, the management of the dissociative reaction, and the modification of dissociative content.

There can be a variety of triggers for dissociation, including mood changes, rising tension, certain people or situations, or specific triggers pertaining to the nature of the original trauma. Recognising these (and the beginnings of the previously mentioned reactions) can be a useful preventative measure. Where possible, avoidance is a default measure. However, grounding procedures can be effective, including focusing on the present or some aspect of the environment as a means of distraction. Grounding words, phrases or objects can be spoken, repeated or felt in the event of stress (Kennerley, 1996).

Additionally, it is important to attempt to identify why the trigger feeling or situation is so intolerable that it leads to dissociation. This can be achieved with the aid of traditional cognitive restructuring techniques (e.g., challenging thinking errors) and more behavioural techniques (e.g., graded exposure). Finally, modification of the content can be achieved through imaginal exposure to a hierarchy of events leading up to the trigger event. Alternatively, image re-scripting procedures involve imaginal manipulation of the event's storyline, whereby the ending or consequences are remoulded to produce a less toxic cognitive outcome (Smucker & Niederee, 1995).

1.2.8.   Measures of dissociation

Steinberg, Rounsaville, & Cicchetti (1990) have noted the difficulties

inherent in measuring dissociation. Patients with dissociative disorders are often unaware, by definition, of symptoms such as amnesia and identity alterations. They also report a significant degree of reluctance among such patients to discuss their unusual experiences. Observational measures lack the capacity to identify the internal states that are central to dissociation.

1.2.8.1. Trait dissociation. There are a number of measures of dissociation, including self-report questionnaires and structured or semi-structured interviews. Interview measures are less commonly used, but include the Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D; Steinberg, Cicchetti, Buchanan, Hall, & Rounsaville, 1993), which can be used to support the clinical impressions given by individuals who score above the cut-off point on questionnaire measures. Self-report measures include the Perceptual Alteration Scale (PAS; Sanders, 1986) and the Dissociation Questionnaire (DIS-Q; Vanderlinden, Van Dyck, Vandereycken, Vertommen, & Verkes, 1993). The best known and the best clinically validated of the self-report questionnaires is the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986). The DES was modified slightly to yield the DES-II (Carlson & Putnam, 1993), and has been analysed using taxonometric methods to develop the shorter DES-Taxon (Waller et al., 1996). The DES-II is a 28-item measure of trait dissociation, which covers three areas: amnestic dissociation; depersonalisation and derealisation; and absorption/imaginative involvement. It was designed as a screening measure to identify pathological dissociation, and to assess dissociative experiences in a research setting. It has excellent split-half and test-retest reliability, as well as good internal reliability. A clinical cut-off has been suggested at a score of 30. The eight-item DES-Taxon has been suggested to be the best measure of pathological

dissociation conditions in the eating disorders, and therefore may have superior clinical utility (Waller, Ohanian, Meyer, Everill, & Rouse, 2001).

1.2.8.2. State dissociation. State measures are potentially useful for both research purposes and for the clinical measurement of changes in symptoms over time. However, there are few such measures in clinical or research use. The Acute Dissociation Inventory (ADI; Leonard, Telch, & Harrington, 1999) was modelled on the Acute Panic Inventory, and was designed to measure dissociation in response to controlled induction in a laboratory setting. Psychometric data concerning the reliability and validity of this measure are not yet available.

The measure used in the present study is the Clinician-Administered Dissociative States Scale (CADSS; Bremner et al., 1998). The CADSS is a 27-item scale, with 19 subject-rated items and eight optional items (not used in this study) scored by an observer. Bremner et al. (1998) found that the CADSS is both valid and reliable, with high inter-rater reliability and internal consistency. It discriminates well between clinical and non-clinical populations, and between those with dissociation-based pathologies (e.g., PTSD, dissociative disorders) and those with affective disorders or schizophrenia. The CADSS correlates significantly but not strongly ($r =$ 0.48) with the DES-II.

1.2.9.   Inducing dissociation in the laboratory

Leonard et al. (1999) conducted an experiment with a non-clinical population to ascertain whether dissociation could be induced in a laboratory setting (for research purposes). Three methods were employed: audio/photic stimulation; dot-staring; and stimulus deprivation. Audio/photic stimulation involves the individual wearing

headphones for listening to particular sounds, and a mask that emits flashing lights. The participant was asked to keep their eyes closed and try to relax for ten minutes. The dot-staring group was asked simply to stare as intently as possible at a dot on a wall for ten minutes. The stimulus deprivation group was asked to wear the mask and headphones, but no sights or sounds were activated. In all cases, ADI ratings were made before and after the experiment.

All three of the methods had the power to induce at least some dissociation. The audio/photic group had significantly higher dissociation scores than the stimulus deprivation group, which in turn had higher levels than the dot-staring group. Possible mechanisms include multi-modal presentation and the 'scientific' credibility surrounding the audio/photic presentation, and isolation from the environment resulting in greater absorption and imaginative involvement in the stimulus deprivation task.

1.3. Bulimia and dissociation

From the earliest days of the concept of dissociation, a connection was drawn with bulimia. Janet (1907) hypothesised that dissociated traumatic memories formed the basis of the symptoms found in the eating disorders. Beumont & Abraham (1983) found that 75% of bulimic patients had experienced depersonalisation and derealisation during binges, and 72% reported having had an affect-blocking effect resulting in enhanced mood.

Torem (1990) found that 92% of a sample of dissociative patients had at least one eating disorder symptom, prompting him to suggest the inclusion in future diagnostic manuals of a new category: dissociative eating disorders. He felt treatment

of some bulimics could not progress until the dissociation had been considered.

1.3.1 Hypnosis studies

Torem (1986) also found that 73% of his eating disordered patients had a high degree of hypnotisability. Hypnosis has been suggested to be a controlled state of dissociation (Hilgard, 1974). Pettinati, Horne & Staats (1985) found similar results, showing a significantly higher incidence of hypnotisability in bulimics than among anorexic patients or age-matched controls. Frischholz, Lipman, Braun, & Sachs (1992) provided further evidence supporting the assumption that hypnotisability and dissociative tendencies are closely related. Patients with dissociative disorders scored significantly higher on tests of hypnotisability than three other psychiatric groups and controls. However, Hilgard (1972) has suggested there may be two different developmental pathways to hypnotisability. One is through trauma, while the other is through increased absorption and imaginative capacity. This would appear to warn against allying high hypnotisability too closely with clinically significant dissociation.

1.3.2. Treatment with hypnosis

Given bulimics' greater hypnotisability, hypnosis is used by some clinicians in their treatment (e.g., Vanderlinden, 1993). Motivation and achievement in traditional treatment strategies (such as keeping food diaries and imposing structured eating) can be facilitated by suggestive imagery (e.g., of relaxed eating) and implanting suggestions under hypnosis (e.g., positive and negative aspects of the eating disorder). Hypnosis could also have a role in discovering the function of the bulimia in the patient's family and social system. This can be achieved by accessing the dissociated part of the patient's ego, which exerts influence during bingeing. The

aim of treatment is to redefine the original goal or purpose of this 'bulimic part', and to attempt reintegration with the rest of the personality. Indeed, many clinicians including family therapists (e.g., Schwartz, Barret, & Saba, 1985) record that patients often report 'two separate voices' or a feeling of changing into another personality. Torem (1986) found that 12/30 eating disordered patients showed evidence of dissociated ego-states that were 'in disharmony with one another.'

Other uses of hypnosis in the treatment of bulimia include relaxation and coping with confronting traumatic dissociated memories. Techniques can include using trance-logic, metaphors and figurative language, all used to enable less threatening exploration, assimilation and integration of the material. Empirically, however, much of this work lacks robustness, uses small sample sizes and provides only anecdotal evidence. Further, more stringent, controlled trials are required.

1.3.3. Clinician reports

Schulman (1991) compared the experience of bingeing with the altered state of dissociation. He also drew similarities between their respective functions, suggesting that they share the aim of blocking out painful feelings and realities. Clinicians have a wealth of literature from sessions and diaries supporting these claims, all pointing to various aspects of dissociative states. McManus & Waller (1995) document binge-eaters describing being in a 'mindless, vacant state', where negative feelings appear 'dampened down' during a binge. Vanderlinden & Vandereycken (1997) report patients stating: "the bingeing/vomiting is a way to emotionally anaesthetize myself...while I binge my mind is totally blank", and "when bingeing it is like somebody else is taking control and all negative feelings are disappearing". The loss of control experienced in dissociation can also be negative in

that it reinforces the patient's conviction that they are not in control of their own actions and feelings. Vanderlinden (1993) also reports patients describing identity disturbances during bingeing: "it was as if it wasn't me bingeing" and "in my head there's something switching off or on, and then I seem to become someone else". They also recount patients' feelings of derealisation and affective numbing: "while bingeing and vomiting I have no feelings anymore" and "I am in a hypnotic trance-like state". Kennerley (1996) documents typical clinical presentations of dissociation (including amnesia) in sessions with bulimic patients. She suggests that in response to emotional material, patients 'space out', become inaccessible and forget the content of the session from the time of the emotional trigger onwards.

1.3.4. Blocking as a defence

The blocking of negative affect (such as abandonment beliefs and loneliness) by both dissociation and binge-eating appears closely connected. How these are connected is the question for future research, of which this study is only a preliminary step. Psychoanalysts assert that bulimics rely on less mature defences (such as dissociation) in order to regulate intolerable impulses of 'rage, shame and sexuality and the consequential guilt and self-deprecation' (Demitrack, Putnam, Brewerton, Brandt, & Gold, 1990). There is evidence for a correlation between the severity of problems, and the age that the individual experiences an unpleasant or abusive event. This corresponds to the maturity of defence mechanism available to the child at that particular stage in its development (Vanderlinden & Vandereycken, 1997). Such coping mechanisms give only short-lived relief. As Root & Fallon (1989) suggest, they inhibit the development of more mature defences to take their place.

1.3.5. Recent experimental work

More scientifically robust studies connecting bulimia and dissociation have included Sanders' study (1986), which reported that bulimic women scored significantly higher than controls on the Perceptual Alteration Scale. Demitrack et al. (1990) have replicated this finding using the DES, as have Everill, Waller, & Macdonald (1995) using the DES II. However, it is of interest that the DES-Taxon measure (which, as previously mentioned, has superior diagnostic utility for identifying severe dissociative pathology) did not show any significant difference between bulimics and controls. There was, however, a significant difference between binge-purge anorexics and controls. Waller, Ohanian, Meyer, Everill, & Rouse (2001) suggest that this may be representative of the fact that dissociation in bulimia can be thought of as being at the higher end of the normal range of dissociation in a continuum model. Dissociation in binge-purge anorexics could therefore be considered qualitatively different and of pathological severity. Both could be incorporated into the Waller et al. (1996) conceptualisation of dissociation (see section 1.2.2). Vanderlinden, Vandereycken & Probst (1995) found that negative perceptions and cognitions related to body image (as assessed by the Body Attitude Test) were the best predictors of dissociation at follow-up after treatment. Everill et al. (1995) have found non-significant associations between bulimia and dissociation, but found that dissociative tendencies accounted for a large percentage of the variance in the frequency of bingeing. They also concluded that the presence of both bulimia and dissociation was strongly indicative of early trauma or loss experiences.

1.4. Schema Theory

As schema theory and the activation of specific negative schemas (or potentially dissociative schemas) are central to the current study, the relevant literature is reviewed below. The fundamentals of schema theory are presented, with a view to introducing the concept of schema activation inherent in this study. Specific schemas relevant to eating disorders and dissociation will be covered in later sections.

1.4.1. Schema definitions

Schemas or core beliefs (these terms will be used interchangeably for the purpose of this study) are discussed in Beckian cognitive-behavioural therapy as being the deepest level of cognition. They can be thought of as beyond automatic thoughts and dysfunctional assumptions, which are the focus in conventional CBT. Beck describes a schema as: "a cognitive structure for screening, coding and evaluating the stimuli that impinge on the organism. It is the mode by which the environment is broken down and organised into its many psychological facets." He went on to state: "on the basis of the matrix of schemas, the individual is able to orient himself in relation to time and space and to categorise and interpret experiences in a meaningful way" (Beck, 1967). Segal (1988) adds to this conceptualisation by defining schemas as: "organised elements of past reactions and experience (comprising cognitive, emotional, behavioural, motivational and physiological components) that form a relatively cohesive and persistent body of knowledge capable of guiding subsequent perception and appraisals."

1.4.1.2. Young's conceptualisation of schemas

Young (1994, 1999) introduced a subset of schemas he termed Early Maladaptive Schemas (EMS). According to the YSQ (Young Schema Questionnaire) developed in 1994, there are five core areas, reflected in a total of between 15-18 schemas. These have formed the basis for Schema-Focused Cognitive Behavioural Therapy (SFCBT), and can be defined by a number of characteristics. Young regards schema formation as a normative part of cognitive development. Maladaptive schemas are formed as a result of ongoing dysfunctional experiences in family relationships, and provide a template to help the child make sense of its sometimes unpleasant and unpredictable environment. Subsequently, schemas are felt to be implicit and irrefutable, and define the individual's behaviour, attitudes, thoughts, feelings and relationships with others in later life. Young's description of the formation of EMS's is akin to attachment theorists' conceptualisations of the powerful impact of parental influence and early experience on infants in both the short- and the long-term (e.g., Bowlby, 1969).

1.4.2. Schema (EMS) characteristics

1.4.2.1. Activation. Schemas can be activated in later life by events or experiences that are reminiscent of, or relevant to, the original schema formation. As an example, situations where one's performance is likely to be scrutinised will activate an existing Failure schema, where the thinking pattern involves thoughts of not being able to cope, and assuming failure as opposed to any other outcome. Often high levels of affect will accompany schema activation and can lead indirectly or directly to psychopathology such as depression, anxiety or an eating disorder. This affective component, along with the inherent rigidity of the schema, is another way of

distinguishing a schema from the dysfunctional assumption level of cognition.

1.4.2.2. <u>Self-perpetuation.</u> Schemas are, by definition, self-elaborating over time, and become deeply entrenched patterns of thinking, feeling and behaving that are difficult to change. Since they are formed in childhood, they form the core of an individual's self-concept. Therefore, in spite of being noticeably dysfunctional, they can be considered familiar and comfortable, and perhaps too integral a part of one's personality to alter. The persistence of schemas in individuals can be explained in terms of three processes: schema maintenance, schema avoidance and schema compensation.

<u>1.4.3. Schema Processes</u>

1.4.3.1. <u>Schema maintenance.</u> This refers to the cognitive distortions such as selective abstraction, magnification and overgeneralisation central to Beck's (1967) theory of cognitive behaviour therapy. For example, an individual will exaggerate, seek out and be biased towards information that confirms or supports their schema, and will deny, negate, and minimise disconfirmatory evidence. This tendency results in self-defeating patterns of behaviour, such as maladaptive partner selection. An example would be a woman who has a Subjugation schema (where she places her needs and herself as a low priority in order to please others) and who selects dominant partners. She can continue to be subordinate (and possibly comfortable in a familiar role) and reinforce her self-view as being subjugated, thereby affording herself cognitive consistency.

1.4.3.2. <u>Schema avoidance.</u> This involves affective, cognitive and behavioural

avoidance of the feelings, thoughts and triggers associated with schema activation. The level of affect in schema activation is both high and unpleasant. Therefore, the reasons behind schema avoidance are understandable. Affective avoidance can involve numbing of affect where emotions are dulled or avoided altogether. Cognitive avoidance involves a similar process with thoughts, where denial and repression (conscious or otherwise) prevents unpleasant thoughts from having to be processed. There are elements of dissociative processes (which will be discussed in section 1.5.1) in both affective and cognitive schema avoidance. Behavioural avoidance describes the self-defeating process whereby schema-triggering events and experiences are avoided. Consider the example of the man with the Failure schema outlined above. He might avoid putting himself in situations where is likely to be evaluated, so he will avoid going up for promotions, etc. He will avoid the unpleasant experience of interviews, but also avoid potentially disconfirmatory evidence about his Failure schema if he were to be successful. By not seeking promotion, he will not be promoted, thereby reinforcing his Failure schema.

1.4.3.3. Schema compensation. This refers to an apparently functional process of overcompensating for a schema that has turned maladaptive, and results in schema maintenance rather than removal. As a child, an individual may try to adopt contrary behavioural or cognitive styles to combat or redress the balance. An example might be someone with an Emotional Deprivation schema (whose emotional needs have never been met adequately), who demands attention (as a kind of compensation) rather than behaving in a manner that reinforces a sense of deprivation as one might expect. In adulthood, this behaviour is deemed excessive and results in alienation from friends and family, which feeds directly back into the original Emotional Deprivation

schema.

1.4.4. Schema domains

As mentioned in section 1.4.2, Young's (1994) schema questionnaire identifies 15-18 core maladaptive schemas. These are grouped into five domains, corresponding to five primary developmental tasks a child should preferably negotiate. Those domains are: Disconnection and Rejection; Impaired Autonomy and Performance; Impaired limits; Other-Directedness; and Overvigilance and Inhibition. Each domain is considered in more detail below.

1.4.4.1. The Disconnection & Rejection domain concerns the sense that one is both connected socially in terms of feelings of belonging and integration, but also connected emotionally. This second form of connection involves intimacy, predictability and trust in one's relationships to deliver love, attention and respect. Empathy from others is also an important factor in order to help contain and understand emotions. Secure environments incorporating these factors, should protect against the formation of maladaptive schemas in this domain. The EMS's in this domain are *Abandonment/instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness/Shame* and *Social Isolation/Alienation.* Someone with these schemas might have had experience of a family that is detached, cold, rejecting, withholding, explosive, dishonest, unpredictable or abusive. They may also be easily differentiated from the norm in terms of lacking social or physical attractiveness, or having alternative interests and non-traditional gender conventional ideas and behaviours.

1.4.4.2. The Impaired Autonomy & Performance domain concerns the child's ability to exert independence, and to form its own identity. It also involves having the confidence to function and make decisions in a world where they realistically perceive likely dangers, risks and expectations for success. Four schemas can develop if these conditions are not met: *Dependence/Incompetence; Vulnerability to Harm and Illness; Enmeshment/ Undeveloped Self;* and *Failure to Achieve.* A person with such schemas might have a family of origin that is enmeshed or overprotective, or that instils over-exaggerated fears. Such a family is undermining of the child's confidence, fails to develop the child's own responsibilities, or fails to reinforce the child for performing competently in school or in the world outside the family.

1.4.4.3. The Impaired Limits domain concerns the child's ability to know and function within appropriate boundaries concerning both their own behaviour, but also the needs and considerations of others. Schemas in this domain are *Entitlement/Grandiosity* and *Insufficient Self-Control/Self-Discipline.* A typical family of origin might be where parents are permissive and overindulgent. Children are not taught about reciprocity in relationships, and how to tolerate defeat and frustration. Guidance and supervision are lacking, and the child may have an exaggerated sense of its own superiority.

1.4.4.4. The Other-Directedness domain involves an excessive focus on others, to the detriment of one's own needs. This is due to the desire for love, attention or approval, or to avoid negative consequences such as abandonment or retaliation. Emotions as well as needs are subjugated, and hence awareness as well as expression is suppressed. A healthy child is permitted to learn and express feelings and needs

without fear of guilt or reprisals. Schemas in this domain are *Subjugation, Self-Sacrifice,* and *Approval-Seeking/Recognition-Seeking.* Those with these maladaptive schemas have experienced families where love, attention and approval is conditional, and the feelings, needs and perhaps social acceptance/status of the parent take precedence over those of the child.

1.4.4.5. The Overvigilance & Inhibition domain concerns a child's need to express emotions, impulses and choices spontaneously without undue concern for outcome, meeting own or others' expectations or making mistakes. Maladaptive schemas are *Negativity/Pessimism, Unrelenting Standards/Hypercriticalness and Emotional Inhibition.* A typical family of origin would be where the child feels that the only way to please a parent is through achievement, obeying rules and performing duties. As a result, over-vigilance is required to keep up standards, and this is often at the expense of pleasure and relaxation.

1.4.5. Schema-focused Cognitive Therapy

Assessment in schema-focused cognitive therapy involves several processes. The patient's history is taken and the YSQ is administered in order to help identify key schemas. The patient is then educated about schemas and schema processes. The therapist will attempt to trigger schemas through imagery and discussing current and past events in the patient's history. Diaries and cognitive questioning will help to identify relevant schemas for change.

The change process is suggested to be similar in some ways to conventional cognitive-behavioural therapy and involves cognitive challenging (i.e., reviewing information for and against the schema and behavioural experiments). The overall aim

is to build adaptive schemas and weaken existing maladaptive schemas. Treatment techniques vary, but include cognitive, interpersonal and experiential approaches. Cognitive techniques include positive data logging and continuum work (Padesky, 1993) aimed at loosening prejudicial schematic beliefs, and flashcards (Young, 1999). Experiential and interpersonal tools include role-plays, limited reparenting, psycho-drama and image restructuring (Young, 1999).

Empirical trials show promise (Beck & Freeman, 1990, Morrison, 2000), but outcome studies are needed. Clinical reports show success in a wide range of DSM-IV disorders including depression and anxiety (Young, Beck & Weinberger, 1993). Other areas of success for schema-focused cognitive therapy are the eating disorders (Waller & Kennerley, 2003), personality disorders, substance abuse in the recovery phase, and dealing with childhood abuse (McGinn, Young & Sanderson, 1995). More work needs to be conducted with regards to comparison studies with conventional CBT (McGinn & Young, 1996).

1.5. Negative Affect and Bulimia

This section will address the literature supporting affect-driven theories of bulimia (with reference to the high incidence of trauma and abuse histories in bulimic patients). Affect-driven models will be introduced. Finally, links with schema theory and specific maladaptive schemas will be identified.

1.5.1. Emotions as drivers in bulimia

As discussed in section 1.1.3.3, there are two schools of thought when considering the aetiology and maintenance of bulimia. The first, already described, involves the starvation model. Binges are precipitated by hunger from having

restricted food intake, due to fears and concerns around body image (and hence self-image). In spite of considerable support for this model, it has been described as necessary but not sufficient in explaining bulimic symptomatology (Meyer et al., 1998). For example, many bulimics do not go through the initial starvation phase. Additionally, in binge-eating disorder there are neither starvation nor purging behaviours. Many patients describe stress and emotions (such as loneliness, sadness, fear and anger) as preceding binges. Agras & Telch (1998) state that both starvation and mood are important in triggering objective binges, but only negative affect is a factor in subjective binges. Presnell & Stice (2003) conducted an experimental test of the starvation model and found that decreases in calorific intake appeared to reduce rather than increase bulimic symptoms.

Additional support for an affect-driven hypothesis comes from Telch & Agras (1996), who showed that BED patients were more likely to binge as a result of negative mood induction than due to starvation. Waller & Mijatovich (1998) presented subliminal emotional cues to a non-clinical sample of women with relatively healthy or unhealthy eating attitudes. They found that the emotional cues, and in particular those relating to abandonment, prompted higher levels of eating in participants with unhealthy attitudes. A similar experiment had the same result, but not when using subliminal appetitive or food cues (Meyer & Waller, 1999).

Other research shows that negative affect undermines the individual's ability to maintain control over eating (Fairburn, 1997). Laberg, Wilson, Eldredge, & Nordly (1991) showed in bulimics that negative affect results in increased cravings and enhanced attention to pictures of food. Additionally, there is a significant attentional bias towards negative information and self-esteem threats (McManus, Waller, & Chadwick, 1996). In particular, bulimic women with a history of sexual abuse show

an attentional bias towards abuse-related information, and this bias is proportional to the severity of their bulimic symptomatology (Waller, Quinton, & Watson, 1995). This suggests that bulimics have over-elaborated cognitive representations (akin to schemas) around threat, abuse and negative emotions, which lead to cognitive biases and avoidant styles.

1.5.2. Relation to early childhood trauma.

Stress, trauma and abuse have been strongly associated with bulimia and the triggering of bulimic symptomatology. It seems that the earlier the trauma, the more severe the future psychopathology. Vanderlinden & Vandereycken (1997) suggest that this association is a product of the developmental stage of the child at the time of trauma, and hence what cognitive and behavioural resources are available at the time. Therefore, the earlier the trauma, the more primitive the defences or coping strategies that are employed to help cope. Unfortunately, primitive defences can inhibit the growth of more mature responses (Root & Fallon, 1989). In the case of severe abuse, Nijenhuis & Vanderlinden (1995) liken the bulimic response to those of our animal ancestors. When an animal is under extreme stress, it will become highly aroused and restrict food in favour of being on alert for imminent danger. This is interrupted by short bursts of rapid feeding (akin to a binge) in order to compensate for loss of body weight.

Equally, abuse or trauma can occur at a stage where not only are behavioural and cognitive responses not fully developed, but also the neurophysiology of the brain has not yet matured. Jacobs & Nadel (1985) describe how in very young children the hippocampus (associated with cognitive-oriented strategies) is not fully developed, and the primitive 'freezing' response of the amygdala is the only available coping

mechanism.

Abuse is extremely common in bulimic patients' histories. Vanderlinden &
Vandereycken (1997) have documented rates from 7-70%, but in their own work
found that 25% of binge-purge anorexics, 37% of bulimics (bulimia nervosa) and
58% of EDNOS patients had experienced childhood trauma. 20% had suffered child
sexual abuse, which is higher than for the general population. Sexual abuse is also
more often comorbid with dissociative symptoms.

Much of the literature focuses on sexual abuse alone, and to a lesser extent
physical abuse. However, there is evidence to suggest that emotional abuse, poor
parenting and loss of significant others can be as important in the development of
eating disorders. An investigative study into the childhood experiences of eating
disordered patients (Schmidt, Tiller & Treasure, 1993) found that the families of
normal weight bulimics scored more highly on parental indifference, excessive
parental control and physical violence than did anorexics' families. Vandereycken
(1994) conducted a similar study with bulimics' families, and reported 'neglectful
parenting' by mothers and 'affectionless control' by fathers. There was also a higher
incidence of harsh, critical comments, as in high expressed emotion in bulimic versus
anorexic families.

An important mediating factor between the abuse and subsequent
symptomatogy is the initial response to the disclosure of the trauma (Friedrich, 1990).
Poor reactions led to more severe symptoms and a greater likelihood of complications
such as PTSD and dissociation. Waller & Ruddock (1993) showed a link between
poor or hostile responses and frequency of vomiting and symptoms of borderline
personality disorder. Everill & Waller (1995a) also identified increased feelings of
guilt and self-blame in those who received such a response. Shame and guilt are

common psychological effects of abuse, along with feelings of worthlessness, powerlessness, stigmatisation and being different (Finkelhor & Brown, 1985; Jehu, 1988). These are perceived to act as mediators between abuse and not only eating disorders, but also dissociative symptoms (Vanderlinden & Vandereycken, 1997). Hence, the more the individual blames herself, the more likely it is that the experience will be dissociated away from conscious awareness.

Meyer et al. (1998) suggest that the over-elaboration of schemas and attentional biases (e.g., to abuse-related and other negative information), formed as a result of early abusive experiences, leads to bulimic symptomatology. Indeed, Root & Fallon (1989) describe the functional role of bingeing as being to reduce the cognitive and emotional effects of childhood trauma.

1.5.3. Affect-driven models

Lacey's model (1986) begins by considering a conglomeration of negative circumstances in childhood, such as an adverse family environment, a family preoccupation with weight and appearance, and a tendency to judge oneself by what others say. He suggests that such individuals lack appropriate coping skills and have impaired relationships. They may also experience a poor sense of their own identity with regards to control and effectiveness. Adolescence and leaving home is a difficult time for any individual, but in the case of bulimics, losses and relationship and sexuality issues form considerable stressors. The family background, including relations modelling eating-disordered behaviours and a sociocultural emphasis on thinness, all predispose these individuals to manipulate food as a defence mechanism. In the short-term, the negative affect generated by life events and resulting excessive self-reflection and criticism is moderated or blocked by the process of bingeing.

Bingeing soothes anger and distress, and forms an alternative to loneliness and boredom. It is therefore positively reinforcing and self-maintaining.

The Root & Fallon (1989) model also considers the anaesthetic nature of bingeing, but primarily with reference to bulimic victims of abuse. There are other similarities with the Lacey model, in that the functions of bingeing also appear to deal with the attempt to assert control, predictability and structure in the face of intense negative feelings and insufficient alternative coping strategies.

A more recent model (figure 3 overleaf) has been proposed by Waller (under consideration). This model differs from others in several ways. First, it considers both the aetiology and maintenance of eating psychopathology. Secondly, it concentrates more on the schema or core belief level of cognition, as opposed to negative automatic thoughts or dysfunctional assumptions. Core beliefs generate hot cognitions or automatic thoughts via internal or external triggers. External activation, such as a negative comment from a partner, is mediated by the processes of attentional bias and cognitive avoidance. Internal activation occurs through the process of schema maintenance, whereby internal events become progressively linked to the core belief. Thirdly, the model is not specific to bulimia or even to the eating disorders. As Fairburn, Cooper, & Shafran (2003) advocate, a more 'transdiagnostic' approach to the eating disorders and their treatment is one possible route for future research. The Waller model proposes different versions, one for anorexia and one for bulimia, and suggests a dual-route version for those not infrequent examples of patients who experience both types of symptoms. He goes on to state that the model could be used for a number of behavioural phenomena, such as OCD and addictions.
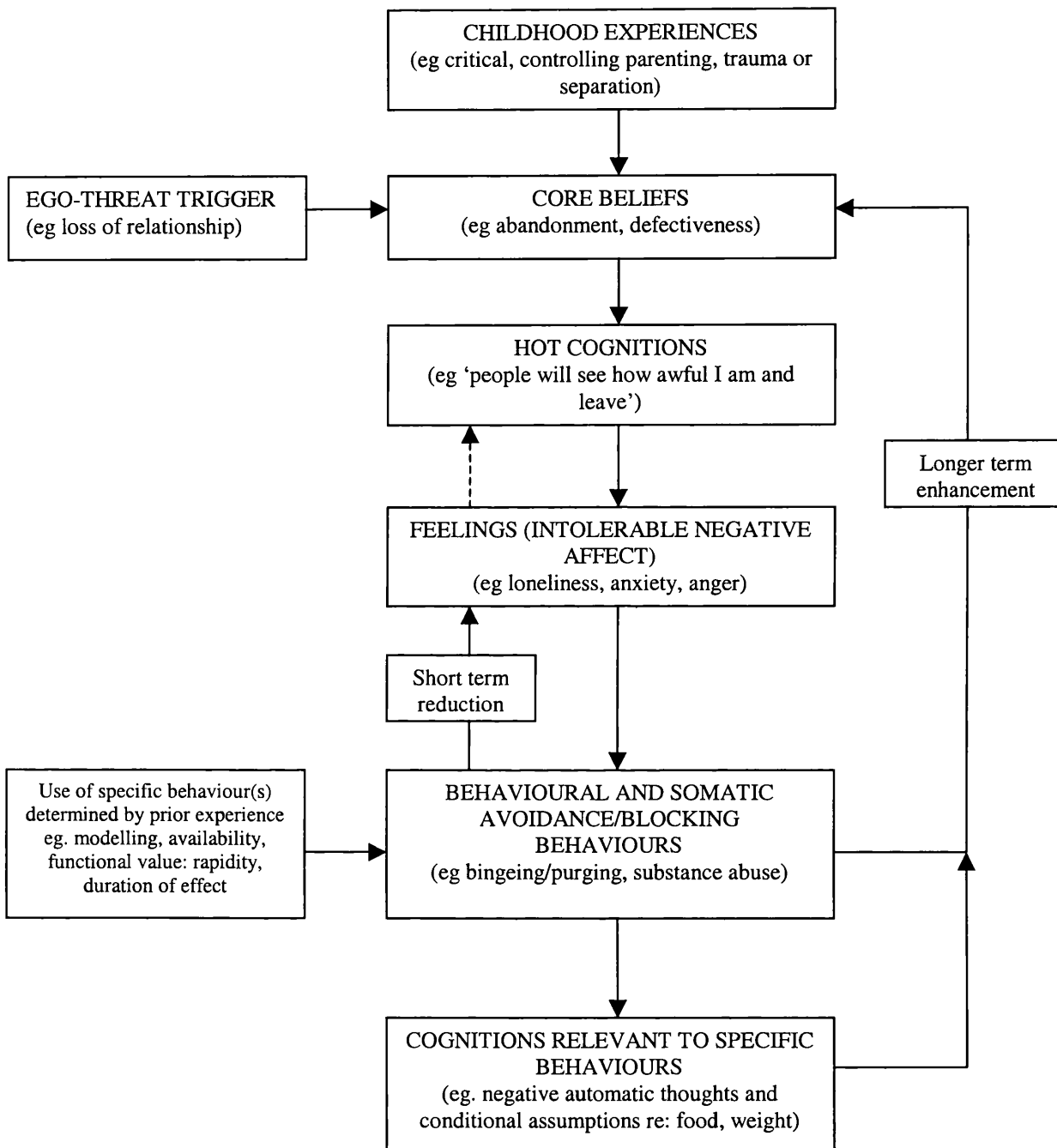
Figure 3. Schematic representation of a Schema-focused based Cognitive-Behavioural model of bulimia

Figure 3 illustrates the element of Waller's model relating to bulimic and other impulsive behaviours. It outlines how negative core beliefs are formed in childhood as a result of early experiences. As stated before, internal or external triggers result in negative cognitions about the self, which in turn produce negative affect. As a result of Emotional Inhibition core beliefs and/or an emotionally invalidating environment, this affect is intolerable to the individual. Bingeing (or other impulsive behaviours - Favaro & Santonastaso, 1998), as suggested in other models, has an anaesthetic or blocking effect in the short term and is positively reinforcing. Other impulsive behaviours may be utilised as a function of their availability and blocking capabilities. For example, alcohol is easily available, has a slow onset but a long-lasting effect. In contrast, self-harm is more immediate but short-lived. The model also considers the dual function of vomiting/purging. On the one hand, vomiting serves to reduce the calorific impact of the binge, but many bulimics purge in the absence of bingeing, suggesting that vomiting also serves to regulate cognitions and affect (Pitts & Waller, 1993).

The principal process is one of secondary avoidance of affect, in that the affect is blocked by bingeing and/or vomiting once it has been triggered. This is akin to Young's (1994) schema avoidance. Schema maintenance is also partly in evidence, as bingeing and vomiting are negatively perceived and feed back into core beliefs relating to insufficient self-control or defectiveness. Cognitions relating to food and body image are perpetuated by the continuing eating-disordered behaviours, and by the need to be cognitively consistent.

1.5.4. Links with schema theory

Support for the ideas contained within the Waller model comes from a

wealth of research into the role of specific core beliefs/schemas in eating disorders. Individually, there is support for many different schemas including: Social Isolation, (Waller, 2002), Personal Inadequacy (McManus et al., 1996), Defectiveness/Shame (Andrews, 1997; Waller & Ohanian, 1997; Waller, 2002), Emotional Inhibition (Waller, Ohanian, Meyer, & Osman, 2000b), Insufficient Self-Control (Waller et al., 2000b), and Vulnerability to Threat and Harm (McManus et al., 1996; Waller & Ohanian, 1997). The importance of the Abandonment schema has been stressed by many studies (Patton, 1992; Waller & Ohanian, 1997; Meyer & Waller, 1999; Waller et al., 2000b). In the Waller model (under consideration), these core beliefs are formed by early childhood experiences. Previous sections have documented how adverse childhood experiences have been linked with bulimia. Leung, Thomas, & Waller (2000) found specific links between negative core beliefs and unhealthy family functioning in eating disorders, and Waller, Meyer, Ohanian, Elliott, Dixon, & Sellings (2001) has found the same for cases of childhood sexual abuse.

A study by Waller et al. (2000) found that three or four core beliefs in particular could be used to differentiate the cognitive content of bulimic patients from that of normals. Defectiveness/Shame, Emotional Inhibition, Insufficient Self-Control and Failure to Achieve beliefs all accounted in some way for the range of bulimic disorders and symptoms. The strength of the Emotional Inhibition schema predicted the frequency of bingeing, whereas the strength of the Defectiveness/Shame schema predicted the frequency of vomiting. Waller et al. (2000) also showed that three different bulimic disorders (binge-eating disorder, normal weight bulimia, and bulimic anorexics) have different cognitive profiles as defined by three of the key schemas. For example, binge-eating disordered patients have low scores on Insufficient Self-Control and on Defectiveness/Shame but higher scores on Failure to

Achieve. They would see themselves, therefore, as not particularly flawed or lacking in control but relatively unsuccessful. By extension, normal weight bulimics see themselves as flawed and lacking in control but relatively successful. Finally, low weight bulimic anorexics see themselves as extremely flawed, lacking in control and unsuccessful.

Hypotheses involving the four main core beliefs were drawn from this research in line with previous work (Lacey, 1986; Root & Fallon, 1989; Young, 1994). They stated that bingeing results from a need to reduce intolerable affect (possibly as a result of an Emotional Inhibition schema). However, they propose that vomiting serves to reduce awareness of intolerable cognitions that pertain to a Defectiveness/Shame schema, and regulates affect (as suggested by Pitts & Waller, 1993). Core beliefs around Insufficient Self-Control could be maintained by the individual's perceived or actual inability to deal with intolerable affect and cognitions in any way other than impulsive methods (such as bingeing). Finally, Failure to Achieve schemas exert influence through over-critical self-other comparisons, suggesting that social anxiety has a role to play in the aetiology and maintenance of bulimia.

1.5.5. Abandonment as negative affect in the current study

Lacey (1986), among others, has drawn attention to the centrality of experiences of loss and separation in the aetiology of bulimia, and schema focused work with eating disorders patients often reveals abandonment schemas, alongside other commonly held schemas (such as defectiveness/shame and emotional inhibition). In terms of semantics, it is easier to encapsulate the full spectrum and connotations of the abandonment schema with one word ('lonely'), than it is with

other central schemas.

Section 1.6.2. outlines how abandonment cues are used particularly in subliminal studies, exploring links between negative affect and bulimic psychopathology. In particular, the Meyer & Waller (1999) paper serves to highlight the superior effect of abandonment over other emotion cues, positive or negative. Waller et al. (1997) presented a paper that links abandonment schemas with frequency of bingeing and vomiting.

1.6. Subliminal Activation

This section covers the nature and hypothesised process of subliminal activation, and why it is preferable to the supraliminal exposure of cues. Research using subliminal activation relevant to the current study is also reviewed.

1.6.1. Nature and process of subliminal activation.

Subliminal activation implies the processing of information below the level of conscious awareness. There are two main reasons for the use of subliminal presentation of negative affect cues in the current study. One is the relative power (behavioural or affective) of subliminal over supraliminal (available to consciousness) presentation. The other is based upon the supposition that the key level of cognitive processing relates to schemas, and that this is the level least available to conscious report (Beck & Freeman, 1990; Young, 1999).

Earlier conceptualisations of subliminal activation are phrased in psychodynamic terms. Silverman's (1983) paradigm of Subliminal Psychodynamic Activation (SPA) involves exposing subjects to repeated presentations (4 msecs

appears to be the standard presentation time to ensure subliminality) of drive-related stimuli. He claimed that subliminal presentation influences associated drive-related behaviours and concomitant psychological symptoms. He suggested that "symbiotic" or "unification" messages such as 'Mommy and I are one' can have beneficial effects on those patients with unfulfilled dependency needs (such as alcoholism and depression), and those with "oral-symbiotic fantasies" (Silverman, 1983). The procedure is also purported to be beneficial for schizophrenia and phobias (Bornstein, 1990). Silverman (1983) stated that for the effects to be realised, two criteria should be met. First, the content of the stimulus should "gratify or activate unconscious conflicts related to the behaviour or symptom in question." Secondly, the stimulus should be presented subliminally so that the "message bypasses ego defences" such as rationalisation, intellectualisation or denial, "and conscious counter-control strategies that obviate, counteract and restrict its influence".

A meta-analysis considering this second criterion (Bornstein, 1990) established that subliminal presentations produce significantly stronger effects on behaviour than supraliminal presentation. Furthermore, there was a significant difference between the effect gained when presenting drive-related versus neutral control stimuli, which was not evident in the supraliminal presentations.

In considering the issue of ego-defences, Silverman (1983) explained that while unconscious and automatic, many of the defences in question require a degree of conscious awareness, and involve considerable high-level controlled cognitive processing. An example of how subliminal presentation bypasses such processes would be a patient who might ordinarily reject or deny a presentation (laden with affect) such as 'I am losing Mommy' as irrelevant. If the same message is presented below the level of conscious awareness, anxiety is avoided, the consequent defence of

denial is bypassed, and the message will have an uninhibited (and therefore greater) impact.

Bornstein (1992) suggests that a less psychodynamically oriented explanation can be found in the area of cognitive information-processing. Supraliminal exposure (Zajonc, 1968) is a robust phenomenon, whereby repeated, unreinforced exposure to a stimulus is sufficient to enhance attitudes, affect and judgements (Zajonc, 1968, Mandler, Nakamura, & Van Zandt, 1987). However, research has shown that subliminal presentation is not only sufficient to produce the same changes, but is three to four times greater in its impact (Bornstein & D'Agostino, 1987, Bornstein, 1989). This phenomenon, known as Subliminal Mere Exposure (SME; Bornstein, Leone, & Galley, 1987), occurs not only with affect-laden, but also with neutral stimuli. This causes problems for Silverman's ego-defence theory. Bornstein's (1992) attributional model focuses away from the psychodynamic terminology of ego defences, and instead considers the functionally equivalent, information-processing term: "discounting attributions". Both theories involve a reduction or blocking of affect or anxiety inherent in an affect-laden stimulus. However, the attributional model can also account for the fact that SME effects can also be found with neutral stimuli.

In the affect-laden example, the stimulus is presented, and anxiety is provoked and internally perceived by the individual. Hastie (1984) stated that subjects "spontaneously generate causal attributions for changes in internal states". When the stimulus is consciously perceived, the individual can make a discounting attribution based on the situation (i.e., 'I'm anxious but it's OK because I'm in an unusual experimental situation'). Thereby, the cause of the anxiety is externalised and reduced. However, if the presentation is subliminal, the anxiety cannot be attributed to

the experimental stimulus, as it was not consciously perceived. Instead, the anxiety is felt to be dispositional rather than situational, resulting in much greater levels of responding than for the supraliminal presentation. In a neutral stimulus example, repeated supraliminal presentation generates enhanced affect due to feelings of predictability and familiarity, and subjects can make causal and situational attributions accordingly. However, in subliminal presentation, as in the affect-laden example, since there is no conscious awareness of the cues (and in this case the familiarity effect), the affect is attributed to disposition as opposed to situation. This, again, enhances the effect of the stimuli on subsequent responding.

1.6.2. Subliminal Activation studies.

Subliminal studies have shown that the presentation of 'ego-threat', or more specifically abandonment cues, has an effect on eating behaviour. Patton (1992) found that subliminal presentation of an abandonment message: 'Mama is leaving me' led to increased eating. The subjects were non-clinical women with unhealthy eating attitudes (high scores on the Eating Disorders Inventory, EDI), who were asked to take part in a bogus taste discrimination task. A neutral message: 'Mama is loaning it' had no effect. The study has been successfully replicated by Gerard, Kupper & Nguyen (1993), and interpreted psychodynamically as being due to specific cognitions relating to maternal abandonment. However, an experiment by Waller & Mijatovich (1998) used maternal, but not specifically abandonment cues. Neutral ('Mum sees me'), Physical Threat ('Mum hurts me') and Ego Threat ('Mum hates me') cues were used. Results showed that non-clinical women with unhealthy eating attitudes ate significantly more in response to physical and ego threat messages. The effect was shown to be greatest with ego threat cues.

A further experiment (Meyer & Waller, 1999), using single word cues,

provides additional evidence for the effect of preconscious abandonment cues, in the absence of psychodynamic interpretations involving maternal separation. Their study used five cue words: 'lonely' as the non-specific abandonment cue, 'gallery' as the neutral cue, 'happy' as a positive emotional cue, 'angry' as a hostile emotional cue, and finally 'hungry' as an appetitive cue. Results showed that women ate significantly more in response to abandonment cues than any other cue. Women with high EDI scores also ate more when exposed to hostile emotional cues, which suggests that a broader range of negative schemata are activated in women with greater levels of eating psychopathology. The positive emotional cues had no effect, which counters possible arguments suggesting that general emotional arousal is a factor. Appetitive cues did not have any significant effect on eating either, which suggests, in accordance with affect-driven models of bulimia, that threat-related schemas are more central to bulimic psychopathology than food- or weight-related schemas.

It is worth noting that all the above studies have used non-clinical samples. However, the dimensional nature of eating psychopathology (Katzman & Wolchik, 1984) suggests that bulimic populations would show similar results.

Barter & Waller (under consideration) conducted a study into whether unification cues, comprising counter-schematic information, reduced the impact of abandonment cues on eating behaviour. They hypothesised that subliminal unification cues would have either one of two effects, depending on the order of presentation. First, if the abandonment cues were followed by the unification cues, a 'restorative' effect would reduce the amount normally eaten with just exposure to abandonment cues. Alternatively, if the unification cues preceded the abandonment cues, an 'innoculation' effect would be seen. Both hypotheses were supported. This appears to be consistent with the concept of escape behaviours (such as bingeing) serving the

function of preventing conscious awareness of abandonment schema information. The unification cues provide counter-schematic information, and thereby lessen the need to engage in escape behaviour.

1.7. Bulimia, Negative Affect and Dissociation

The previous sections have introduced the main subject areas - bulimia, dissociation, and negative affect - as conceptualised in schema theory and as influenced by adverse childhood experiences such as abuse. Dissociation has been considered in itself as a defence mechanism for dealing with intolerable negative affect, and strong links have been demonstrated between bulimia and dissociation, and between bulimia and negative affect. In terms of combining the three areas, this section reviews three different, but overlapping schools of thought.

1.7.1. Escape Theory- Heatherton & Baumeister

The central tenet of Escape Theory is the bulimic's need to avoid ego-threatening cognitions and affect. Heatherton and Baumeister (1991) suggest that in a state-driven process akin to dissociation, the bulimic's (maladaptive) coping strategy is to narrow the focus of attention to the concrete, the here-and-now, and the immediate stimulus environment. The result of such narrowing of self-awareness is to reduce the likelihood of processing in any depth negative information about self, identity, comparisons with others or implications of various events or occurrences. At the lowest level, "self is reduced to body, experience is reduced to sensation, and action is reduced to muscle movement". This is a strategy employed by people in times of stress or at a risk of failure (Carver & Scheier, 1981), and is broadly similar

to dissociation. Rigid and concrete thinking (as well as a range of thinking errors and biases) characterises this shift to lower cognitive levels, bypassing inhibitory mechanisms, which require more complex temporally and socially flexible functioning (Wegner & Vallacher, 1986). For example, the higher order function of inhibition is governed by moral and social implications, and consideration of not only the present, but also the past and future possibilities. As a result, the bulimic's desire for thinness or control is temporarily overridden, and binge eating begins.

The theory assumes the bulimic has enhanced self-awareness, and unusually high standards in terms of expecting achievement and popularity, all of which combine to create negative affect. Support for the model comes from the aforementioned clear links between bulimic symptoms and emotional distress, as described in affect-driven models and associated research. Butterfield & Leclair (1988) found bulimic women to have unrealistic expectations for performance and achievement. The prevalence for bulimia in high achieving careers (such as business, law and medicine) has been found to be 12%, as opposed to 5% in a sample of the general population (Herzog, Norman, Rigotti, & Pepose, 1986). With regards to heightened self-awareness, Heatherton & Baumeister (1991) reported that bulimics appear to "suffer from an intense sensitivity to other people's opinions and evaluations". Researchers have noted a strong egocentric bias and even a narcissistic self-preoccupation in bulimics (Bauer & Anderson, 1989; Ruderman & Grace, 1988).

Support for the cognitive narrowing hypothesis comes from the aforementioned links between the binge state and dissociative states, in terms of core symptom experiences such as depersonalisation, and the reported negative affect reduction. The characteristic rigidity and irrationality of thought has been found to be in evidence in bulimics during a binge (e.g., Bauer & Anderson, 1989). They have

also been found to score unusually highly on a scale that measures "refusal of meaningful thought" (Thaulberger & Sydiaha, 1977). Additionally, Cattanach & Rodin (1988) have found a tendency in bulimics to use avoidant coping strategies when dealing with stressful life events.

In terms of disinhibition, it is widely documented (e.g., Polivy, Herman, & Garner, 1988) that bulimics often show impulsive behaviours in addition to bingeing (such as self-harm, promiscuity, drug and/or alcohol abuse, or stealing). This would fit with the hypothesis that individuals experiencing cognitive narrowing will act in disinhibited, non-conventional and ego-dystonic ways.

1.7.2. Chandarana & Malla

Secondly, dissociation could be merely a defence mechanism employed by the individual to block the aversive feelings created by the bulimic behaviour itself. Chandarana & Malla (1989) document an ever-increasing severity of 'resultant' psychopathology, from vomiting through self-harm to dissociative states. Their implication is that dissociation is one of the last attempts, rather than an early attempt, to cope with aversive feelings. They also suggest that bulimic symptomatology and dissociative states might represent separate stages, or even separate disorders, in the course of bulimia nervosa. It is of note, however, that Chandarana & Malla (1989) are referring to the more psychopathological end of the dissociation continuum, such as dissociated 'personalities' in their theory. Other theories, while including the possibility of these more extreme states, appear to focus on less severe aspects of dissociation, such as absorption, derealisation and depersonalisation.

1.7.3. Everill & Waller

Thirdly, it has been suggested that the development of the bulimic behaviour as a defence mechanism in its own right is influenced by dissociation as the primary or pre-existing defence mechanism that has been employed by the individual since the time of trauma. Indeed, Briere (1992) stated that dissociation is used to deal with stressors pertaining to the original traumatic experience, but that further defensive mechanisms (such as bingeing, self-cutting, etc.) are needed to deal with subsequent and secondary stressors, such as guilt and self-hatred. These specific defensive behaviours can also serve to interrupt dissociative states. Root & Fallon (1989) also speak of bulimic behaviours as a way to "anaethetise strong feelings associated with the abuse (trauma), to express anger, to create psychological space or to relieve stress and tension".

The Everill & Waller (1995b) model (see Figure 4) proposes that schema-driven dissociation is the primary strategy for the cognitive avoidance of the traumatic trigger (or the traumatic schemata formed as a result). A dissociative schema is formed (which involves similar cognitive processes to other schemas, such as schema maintenance), which serves the function of lowering awareness of the trauma schemata, thus making the individual's life more manageable. Over time the individual may become dependent on dissociation, and the defence becomes more generalised and is used to deal with a variety of other, lesser stressors (Braun & Sachs, 1985). This, while superficially effective, may hinder the development of more mature defences. Additionally, as the trauma schema self-elaborates over time, so too must the dissociative schema in order to 'keep pace'. This increasing reliance on dissociation is likely to be accompanied by greater cognitive narrowing as the individual attempts to filter out emotionally charged information. If the trauma

schema becomes too elaborate and too strong to block through cognitive means, a "separate sphere of consciousness" can form in order to deal with the trauma, and splits off as a separate and independently operating personality (as in Dissociative Identity Disorder).
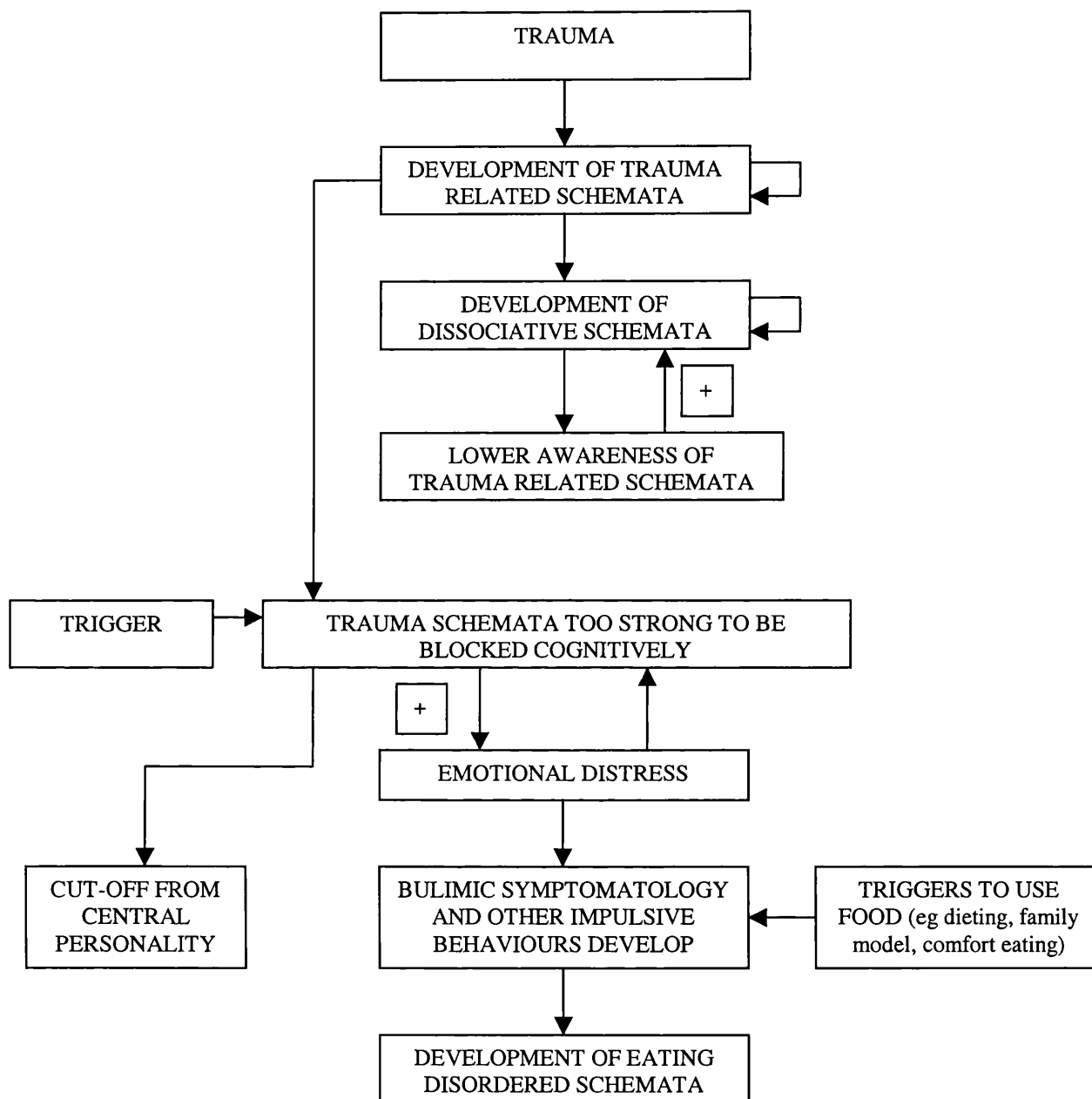
Figure 4. Schematic representation of Everill & Waller's (1995b) model of the relationship between trauma, dissociation and bulimic symptomatology.

Bulimic symptomatology is suggested to arise as a result of a further trauma/trigger (perhaps reminiscent of the original), that cannot be blocked by the dissociative schemata. Everill & Waller suggest that the most likely precipitants are loss, sexual conflict or major life changes. Finkelhor (1988) suggested that four themes (traumatic sexualization, powerlessness, stigmatisation, and betrayal) are characteristic of the original traumatic experience. Aspects of these themes activated in subsequent, lesser, stressful experiences, serve to trigger intolerable affect. In order to cope, and in the absence of mature coping strategies, a further behavioural (non-cognitive) mechanism such as bingeing is employed, as suggested by Briere (1992). Indeed, Lacey (1986) suggests that in individuals prone to dieting and exposed to family modelling, the manipulation of food is a likely defence. There are also issues of availability, legality, morals and danger associated with other behaviours such as drugs, sex and stealing. Initially, the bulimic behaviour is reinforcing in that the intolerable affect is temporarily reduced. It can also help impose structure and predictability to an often chaotic lifestyle (Vitousek & Hollon, 1990), perhaps exacerbated by dissociative episodes. However, a further schema evolves, incorporating disordered cognitions around eating and the disordered eating behaviour. Such cognitions focus on shape and weight as being commensurate with self-worth, and will be triggered every time the individual thinks about eating. As a result self-image is low and distress will be high. These toxic feelings feed into the cycle where they help maintain the 'food' schemata, trigger more dissociation and secondary eating, defensive mechanisms.

Research in support of this model comes from a number of sources. Dissociation is widely reported by patients and clinicians (Feldman-Summers & Pope, 1994) to be successful in blocking awareness of trauma. This can be effective for

many years until the hypothesised dissociative schema is overridden, and the trauma is reactivated by reminiscent scenes (e.g., from books, films, or possibly therapy). The idea of cognitive schemas around abuse or threat has been well established in earlier sections, with reference to particular negative schemas (such as Defectiveness/Shame or Mistrust/Abuse) and attentional bias studies towards threat and abuse related information (e.g., Meyer et al., 1998). A study by Waller et al. (1995) provided some support for the existence of dissociative schemas. They found that non-clinical women with greater dissociative tendencies took longer to identify threat words than neutral words. They propose that in this group, a dissociative schema is activated that involves information that is specifically designed to be irrelevant to the incoming threat. This would serve the function of allowing the individual to divert focus away from the threat and avoid thinking about it. The greater the level of dissociation, the more elaborate the dissociative schema is hypothesised to be. The more elaborate the dissociative schema, the more likely the irrelevant information generated by the schema is to interfere with the original task (i.e., identifying the threat word), thus reducing processing speed. It is important to note that there have been no studies specifically testing this model. The women in this study were from a non-clinical study, and no specific links were explored or drawn between the levels of dissociation and any purported history of trauma or abuse.

1.8. Summary of the literature to date

Each of the three principal topic areas - Bulimia (or bulimic behaviour - BB), Dissociation (D), and Negative Affect (NA) - have been reviewed in order to provide a background to the current study. Negative Affect and Threat have been considered

to be intrinsically related. This assumption is supported by paradigms whereby the activation of negative schemas (such as abandonment) has resulted in negative affect (e.g., Hickson, 1999). Connections and associations between the main areas have also been considered, as depicted below:

1)

$$NA \longrightarrow BB$$

This link has been extensively covered in the literature from a number of different points of view. There are the affect-driven models of the aetiology of bulimia, which draw from evidence from clinician reports of intolerable negative affect/emotions preceding bingeing. Inherent in such models is what Root & Fallon (1989) refer to as the "anaesthetic" or blocking quality of bingeing, whereby the pain of the affect is reduced in the short-term by the bulimic behaviour.

In addition there is the body of literature pertaining to the formation of negative schemas relating to unpleasant experiences in childhood. Abuse of all kinds (sexual, physical and emotional) is strongly associated with bulimia (Vanderlinden & Vandereycken, 1997). The presence of certain schemas (for example, Defectiveness/Shame, Emotional Inhibition) has been demonstrated to predict the type of bulimic presentation, and indeed the frequency of bulimic behaviours such as bingeing and vomiting.

Studies of information processing in bulimic patients show an attentional bias towards self-esteem threats, and information pertaining to trauma and abuse. Finally, and crucially, subliminal studies have shown in a variety of similar and replicated paradigms how presentation of self-esteem threat cues (e.g., abandonment) leads to increased eating in women with disordered eating attitudes (e.g., Meyer & Waller, 1999; Patton, 1992; Waller & Mijatovich, 1998).

2)

$$D \longleftrightarrow BB$$

This link is more akin to a correlation or an association - hence the double-headed arrow (above). Clinical reports, as documented in section 1.3, point to a large overlap of symptoms in patients with the primary diagnosis of either bulimia or dissociative disorders. It appears, in accordance with the prime function of dissociation, that the dissociation experienced by bulimic patients corresponds to the same blocking of affect mentioned in the previous link. Whether this is in a parallel or facilitative capacity is the subject for debate in models such as Heatherton & Baumeister's (1991) and Everill & Waller's (1995b), and for future research. The link between dissociation and bulimia has been demonstrated in hypnotisability studies, where bulimics have been shown to be more susceptible to hypnosis (thought to be a controlled state of dissociation). This susceptibility to hypnosis has uses and further implications for therapy. Bulimics score significantly more highly on established measures of trait dissociation, such as the DES II and the PAS. Finally, dissociative tendencies have been shown to account for a large percentage of the variance in the frequency of bingeing (Everill et al., 1995).

The link connecting each of the three areas is the topic for discussion in the Aims and Hypotheses.

1.9. Aims & Hypotheses

As described in the previous section, the following links have been explored and reviewed:

$$NA \longrightarrow BB$$

$$D \longleftrightarrow BB$$
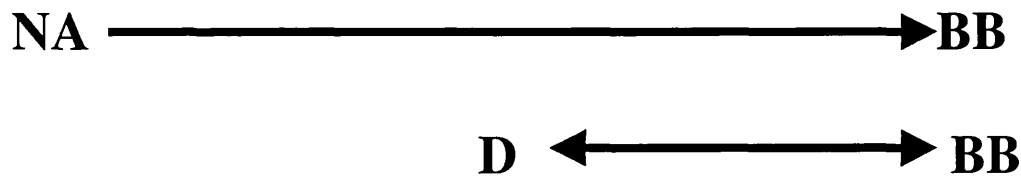
The immediate aim of the current study is to investigate the following

'missing link' (see below) in a bulimic versus control population:

$$NA \longrightarrow D$$

As previously stated, this is potentially the first study in a series whose aim it

would be to provide evidence for one of the three aforementioned models. The current

hypotheses are limited to testing the $T \longrightarrow NA \longrightarrow D$ links. However, results from

this study will establish the validity of these links and enable future researchers to test

the remaining parts of the models.

The Heatherton & Baumeister (1991) model proposes the following chain of

events (where T = Threat), where the cognitive narrowing in dissociation facilitates

the conditions (i.e., a loosening of inhibitions) whereby bulimic behaviour is more

likely:

$$T \longrightarrow NA \longrightarrow D \longrightarrow BB$$

The Chandarana & Malla (1989) conceptualisation can be illustrated by the

following diagram where dissociation is seen as being employed as a result of the

bulimic behaviour.

$$T \longrightarrow NA \longrightarrow BB \longrightarrow D$$

However, the Everill & Waller (1995b) model proposes a slightly different set

of processes, whereby a pre-existing dissociative schema (which evolved to help cope with an early trauma) becomes joined by bulimic behaviour as an additional coping mechanism to deal with the intolerable negative affect. It is unclear how dissociation and bulimic behaviours (if they serve a similar function) share the duties of dealing with the affect. A number of possibilities exist. It is possible that they function in parallel. It is possible that the bulimic behaviours deal with the more severe affect leaving the existing dissociative schema to deal with lessor stressors. It is also a possibility that the bulimic behaviours replace dissociation as the primary defence.

$$T \longrightarrow NA \begin{array}{c} \nearrow D \\ \\ \searrow BB \end{array} \quad \updownarrow$$
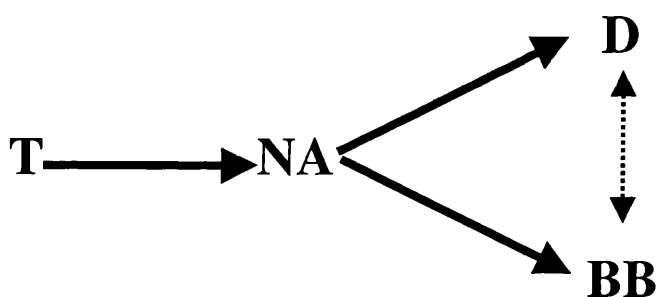
The current study therefore, constitutes only a partial examination of the three models, with specific reference to the structure and dissociative processes involved in the threat-negative affect to dissociation link. The Threat, Negative Affect and Dissociation parts of the models are investigated with a view to testing the validity of the links as well as exploring the sequencing and exclusivity of the pathways. Whether or not dissociation is the primary, or even exclusive consequence of negative affect will in part help to provide support for the respective models. Importantly, the measure of dissociation will test state dissociation, as opposed to trait dissociation.

The hypotheses are as follows:

Hypothesis 1: The activation of negative schemas will lead to a significant increase in state dissociation in the bulimic group but not in the control group.

Hypothesis 2: The activation of negative schemas will lead to a significant increase in depression and anxiety in the bulimic group but not in the control group.

CHAPTER 2

2.0 Method

2.1 Participants

Two groups of participants were used. Each group went through two conditions, with the order counter-balanced. The two groups were bulimia patients (clinical group) and age-matched, non-clinical participants (control group). All participants were female. All participants gave their informed consent. Power analysis (using G-power; Faul & Erdfelder, 1992), based on 80% power with a 5% significance level, indicated that there should be a total sample size of 52 to give an effect size of 0.7.

2.1.1 Bulimic Group

This group consisted of 24 women, who met DSM-IV (American Psychiatric Association, 1994) criteria for any of the bulimic disorders (bulimia nervosa, binge-eating disorder (BED), anorexia nervosa of the binge-purge subtype (AN B/P), or EDNOS). The proportions representing the individual subtypes were as follows: (16 bulimia nervosa patients, two BED, four AN B/P, and two EDNOS.)

The participants were recruited from outpatient assessments at a South London outpatient eating disorders unit. Diagnoses were made by the individual clinician during the course of the assessment. The mean age of the participants was 31.23 years (SD = 9.3, range = 19.6 – 54.8). Mean BMI was 25.62 (SD = 11.1, range = 14.0 – 60.8).

2.1.2 <u>Control Group.</u> This group consisted of 26 women recruited from a non-student population, through opportunity sampling of work and personal contacts. They were asked if they had a past or current diagnosis of an eating disorder. If they had received a diagnosis, they were excluded from the study. The mean age of the non-clinical participants was 30.74 years (<u>SD</u> = 8.0, range = 20.9 – 52.4). Mean BMI was 21.95 (<u>SD</u> = 2.2, range = 18.5 – 26.0).

2.2 <u>Measures</u>

The study used four different measures, completed by all participants (see Appendix A). They were as follows:

- Eating Disorders Inventory (EDI; Garner, 1991);

- Dissociative Experiences Scale (DES-II; Carlson & Putnam, 1993).

- Clinician Administered Dissociative States Scale (CADSS; Bremner et al., 1998);

- Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1981);

2.2.1 <u>Eating Disorders Inventory (EDI).</u> The EDI in its original form is a 64-item, self-report measure of eating attitudes and symptoms associated with anorexia and bulimia nervosa. A shortened version was given to participants in order to confirm that the control participants did not have attitudes or symptoms that indicate an eating disorder. This version consisted of the 23 items that make up the three eating-related subscales: Drive for Thinness, Body Dissatisfaction and Bulimia. Eight other scales address what Valdiserri and Kihlstrom (1995) referred to as 'ego-dysfunction'. These remaining scales include: Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears, Aceticism, Impulse Regulation and Social Insecurity. Participants are asked to rate how true each item is of them on a 6-point

scale: Always (A), Usually (U), Often (O), Sometimes (S), Rarely (R), or Never (N).

Items include statements such as: " I eat when I am upset," and " I feel satisfied with

the shape of my body". The Drive for Thinness subscale consists of items measuring

dieting, fear of weight gain and a preoccupation with weight (items 1, 5, 7, 9, 11, 14,

18). The pursuit of thinness is seen as a defining feature of eating disorders. The Body

Dissatisfaction subscale consists of items measuring dissatisfaction with certain key

areas of the body (hips, thighs, stomach, buttocks). In its extreme form, preoccupation

with size is indicative of eating disorders and a precursor for restricting intake (items

2, 6, 8, 10, 13, 16, 20, 21, 23). The Bulimia subscale consists of items (3, 4, 12, 15,

17, 19, 22) measuring the tendency to have thoughts around, and engage in, bulimic

behaviours (such as bingeing and purging).

The EDI has good reliability and validity, as measured in a number of

different populations and cultures. Test-retest reliability for the three scales ranges

from 0.77 to 0.96 (Wear & Pratz, 1987). Validity has been demonstrated by

significant differences between restrictive and bulimic anorexics on the bulimia

subscale (Garner, Olmsted, & Polivy, 1983), and by correlations between anorexic

patients' subscale scores and clinicians' ratings of the same patients (Garner et al.,

1983). Construct validity has been demonstrated to be good (strong correlations

between other measures of eating pathology and each of the three subscales, p <

0.001) when compared with the Eating Attitudes Test (EAT-26: Garner, Olmsted,

Bohr, & Polivy, 1982). Internal consistency has been reported to be above 0.8 for

each of the subscales (Garner, 1991).

2.2.2 Dissociative Experiences Scale (DES-II). As previously described in the

introduction, the DES-II is a 28-item, self-report measure of trait dissociation, which

inquires into the frequency of dissociative experiences in the daily lives of participants. It covers three areas: amnestic dissociation; depersonalisation and derealisation; and absorption/imaginative involvement. Participants are asked to judge to what degree the experiences described in the questions apply to them by circling the percentage of the time they have the experience - from 0% (never) to 100% (always). The DES-II was designed as a screening measure to identify pathological dissociation, and to assess dissociative experiences in a research setting. It was not designed as a diagnostic instrument. However, a clinical cut-off has been suggested at a score of 30.

The DES-II has excellent split-half reliability (0.83, Bernstein & Putnam, 1986) and test-retest reliability (0.79-0.96, e.g., Bernstein & Putnam, 1986). It also has good construct validity, as demonstrated by the high scores of subjects with DID and PTSD (Bernstein & Putnam, 1986). Convergent validity is good (0.87 with the DIS-Q, 0.52 with the PAS), as are discriminant and criterion validity, as measured by correlations with non-dissociation measures and DSM-IV diagnoses respectively. A study by Waller et al. (2001) showed that it successfully discriminated between bulimic women and non-clinical women. Carlson & Putnam (1993) report that mean DES-II scores in the eating disorders ranged from 12.7 to 17.8. In terms of factor analyses, it appears that the three subscales may reflect the differing frequency of endorsement of the various items, rather than reflecting separate subcomponents of dissociation (Waller et al., 1996). Therefore, the value of the scale lies in its ability to measure general dissociation rather than individual elements of the construct (Bernstein & Putnam, 1986).

2.2.3 Clinician Administered Dissociative States Scale (CADSS). Again, as previously described in the introduction, the CADSS is a 27-item scale, with 19

subject-rated items and eight optional items (not used in this study) scored by an observer. The subjective component of the CADSS is divided into questions covering three subscale areas: amnesia (items 14, 15), depersonalisation (items 3-7) and derealisation (items 1, 2, 8-13, 16-19). Each question is prefixed by the phrase "at this time". The participant endorses one of five possible responses: 0 = 'not at all', 1 = 'slightly', 2 = 'moderately', 3 = 'considerably', 4 = 'extremely'. Bremner et al. (1998) found that the CADSS is both valid and reliable. It has high inter-rater reliability (intraclass correlation coefficient (ICC) of 0.92, $p < .01$ for the total score; ICC of 0.99, $p < .001$ for the subjective component), and good internal consistency (coefficient alpha = 0.94 for the subjective component, 0.74 for amnesia, 0.82 for depersonalisation, .90 for derealisation). It discriminates well between clinical and non-clinical populations (in 86% of cases), and between those with dissociation-based pathologies (e.g., PTSD, dissociative disorders) and those with affective disorders or schizophrenia. The CADSS correlates significantly but not strongly ($r = 0.48$) with the DES-II. This result is due to the DES-II being a measure of trait as opposed to state dissociation. The DES-II also measures absorption, which is not addressed by the CADSS. The CADSS is sensitive to changes in dissociative symptomatology before and after a traumatic memories group in PTSD/dissociative patients (Bremner et al. 1998). This demonstrates its utility as an easily administered, repeated measure of present-state dissociative symptomatology.

2.2.4. <u>Hospital Anxiety and Depression Scale (HADS)</u>. The Hospital Anxiety and Depression Scale is a commonly used, well-validated, self-rating questionnaire. It measures anxiety and depression, but without being confounded by the somatic symptoms of physical disorders. It has 14 items split into two seven-item scales - one for depression and one for anxiety. Each item is rated on a four-point scale. Items

include statements such as "I get sudden feelings of panic", or "I feel as if I am slowed down". The HADS has good psychometric properties in terms of factor structure (Bjelland, Dahl, Haug & Neckelmann, 2002; Mykeltun, Stordal & Dahl, 2001), only moderate intercorrelation (correlations between the two subscales varied from 0.40 to 0.74, with a mean of 0.56, Bjellend et al., 2002), and internal consistency (Cronbach's coefficient alpha = 0.83 for the anxiety subscale, and 0.82 for the depression subscale). As well as indicating the presence of clinical depression or anxiety, Zigmond & Snaith (1983) showed that the two subscales could also indicate severity of those states. Correlations between psychiatric ratings and both subscales were highly significant ($r = 0.70$ and 0.74 for depression and anxiety respectively, both $p < .001$). Correlations between HADS and other commonly used questionnaires were in the range 0.49-0.83. The sensitivity and specificity for both subscales of 0.80 (Bjelland et al., 2002) were similar to that achieved by the GHQ (General Health Questionnaire).

2.3. Procedure

All participants were given an information sheet (see Appendix B), outlining the aims and content of the study. Any questions they had were answered in the debriefing at the end of the experiment. They were asked to sign a consent form (Appendix C), and were informed that their treatment would not be affected by whether or not they took part. From the assessment, age, objective BMI (Body Mass Index = weight in kg divided by height in metres squared) and (where appropriate) clinical diagnosis were all recorded. Order of presentation of stimuli in the experiment (i.e., cue order: threat-neutral vs neutral-threat) was also recorded, although the experimenter was blind to all that information until after testing had taken place.

2.4. Experimental Materials

The computer-driven task was carried out on a single desktop PC (IBM compatible; SVGA screen in MS-DOS mode), using a Pascal Turbo programme. The words were presented using a Subliminal Psychodynamic Activation (SPA) procedure (Silverman, 1983). The presentation time was 16 milliseconds. Studies have shown that the semantic content of cue words is not available to conscious awareness at this speed (e.g., Kihlstrom, 1993; Van den Hout, Tenney, Huygens, Merckelbach, & Kindt, 1995).

Three cue words were used: a threat cue ("lonely"); a neutral cue ("gallery"); and a unification or 'wash-out' cue ("friendship"). The unification cue has been demonstrated by Barter & Waller (under consideration) to be effective in reducing affective arousal to previous baseline levels. At all times when the cue words were not present, a fixed number of X's (of a length that more than covered the length of any of the cue words) remained in the centre of the screen.

Participants were asked to sit in front of a computer and fixate on the first row of X's. All stimuli were presented in the centre of the screen in lower case Arial script (font size 16). The participant's head was approximately 60cms from the screen. The testing was carried out in a quiet room with no distractions. A normal office desk and chair were used.

2.5. Experimental procedure

The total time of the experiment was on average 25-30 minutes. Figure 5 shows the order of events (described below).

Figure 5. Flow Chart demonstrating the sequence of tasks.

EDI + DES-II

⬇

| XXXXXXXXX |
| (lonely or gallery) |

⬇

| CADSS + HADS |

⬇

| XXXXXXXXX |
| (friendship) |

⬇

| XXXXXXXXX |
| (gallery or lonely) |

⬇

| CADSS + HADS |

⬇

| XXXXXXXXX |
| (friendship) |

⬇

| **WORD RECOGNITION TEST** |
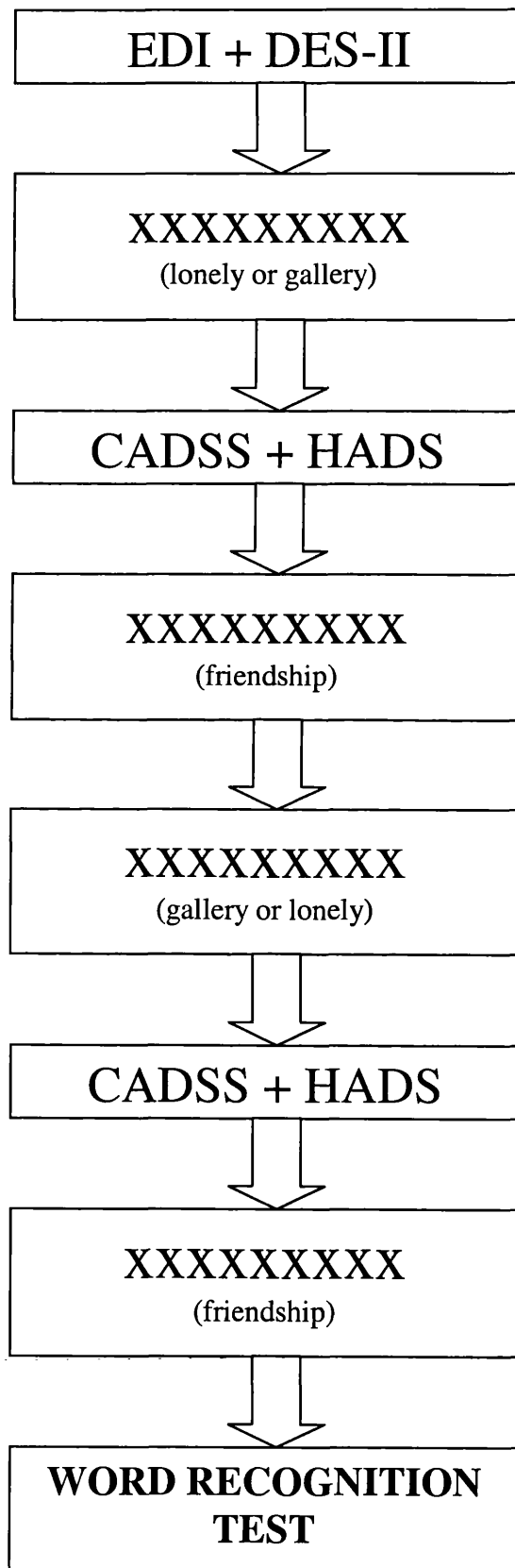
1. Participants were asked to complete the EDI, & the DES-II.

2. They then completed a simple computer search task, where they were asked to focus on a row of X's being presented in front of them. The rows of X's were presented on the screen for 2.5 seconds, and either the threat cue ('lonely') or the neutral cue ('gallery') was presented subliminally (16 msecs). The task lasted for two minutes, during which there were 20 presentations.

3. Participants were then asked to complete the CADSS and HADS.

4. This was followed by a 'washout' subliminal unification cue ('friendship'), involving 20 presentations over two minutes.

5. Step 2 was repeated using the other cue (order counterbalanced).

6. Steps 3 & 4 were repeated.

7. There was a standard test for experimental validity in such studies, testing whether any words used in the task were recognised at above chance levels when presented supraliminally (see 2.6).

8. Participants were then informed that the experiment was over. They were thanked for their participation and debriefed.

2.6. Word Recognition Task

The aim of this task was to ensure that the presentation of cue words was indeed subliminal. The participant was presented with twelve words (see Appendix D), including the three cue words, and asked to circle three they felt they had seen. The nine words were matched for length, semantic content and features (i.e., the 'sticks' and 'tails' as in 'd' and 'y'). If, as anticipated, the participants had no idea which words they had seen, they were asked to guess. If the presentation was subliminal, one would expect 25% correct identification, corresponding to chance

levels.

2.7. Ethical Issues

The study used subliminal cues to activate hypothesised abandonment schemas in the participants. Studies show the effects of such presentations to be short-lived, and so we expected there to be no long-term difficulties encountered. The unification cue 'friendship' has been shown in a study by Barter & Waller (under consideration) to have both an inoculation and a restorative effect in conditions broadly similar to these. This study was approved by Wandsworth LREC (See Appendix E).

2.8 Data Analysis

The dependent variables are scores on the CADSS (state dissociation) and the HADS (depression and anxiety). The data were analysed using Repeated Measures ANOVAs with one between-subjects factor (group) and one within-subject factor (cuetype). Post-hoc analyses included exploring associations were between dissociative reactivity (and affective reactivity) and measures of eating pathology (such as the EDI scales, BMI and binge frequency [taken from the clinical interview]) and trait dissociation (DES-II scores). Dissociative and affective reactivity is measured by calculating a difference score of threat minus neutral scores for the respective measure (e.g., total CADSS or HADS anxiety). Dissociative reactivity is defined as the level of dissociation in response to threat cues.

Not all of the variables were normally distributed. However, preliminary analyses showed identical findings with parametric and non-parametric analyses. Considering that investigating interactions was the focus of the research, a decision

was made to treat the data as normally distributed and to perform only parametric

analyses.

CHAPTER 3

3.0 Results

3.1. Overview

This section will first review the descriptive data for the participants for all scores not affected by the independent variable (i.e. threat versus neutral cue type). These include age, BMI, binge frequency and scores on the EDI and DES. Cue identification levels will also be addressed. Secondly, dissociative reactivity to the threat cues will be explored, using repeated measures ANOVAs to test the hypotheses. Thirdly, dimensional links between dissociative reactivity and eating pathology will be addressed. Finally, the association of dissociative reactivity and trait dissociation (as measured by the DES) will be considered.

3.2. Descriptive data.

Table 1 includes participants' characteristics (age, BMI and objective binge frequency), as well as descriptive data regarding scores on measures completed prior to the experiment. The Means and standard deviations are presented for the DES and for the total and subscale scores for the EDI.

<u>Table 1: Means and Standard Deviations of EDI and DES scores with descriptive data regarding participants' Age, BMI, Binge frequency.</u>

Measure	**Non-Clinical (n = 26)**		**Clinical (n = 24)**	
	Mean	**(S.D.)**	**Mean**	**(S.D.)**
EDI[1] Total	4.96	(5.91)	43.8	(11.43)
EDI Desire for Thinness	0.31	(0.74)	14.5	(3.88)
EDI Body Dissatisfaction	4.58	(5.55)	18.3	(7.86)
EDI Bulimia	0.08	(0.39)	11.0	(5.89)
DES[2] Total	5.87	(5.06)	23.1	(17.4)
Age	31.2	(8.02)	30.7	(9.3)
Body Mass Index (BMI)	21.9	(2.18)	25.6	(11.1)
Binges per week	(N/A)	(N/A)	10.5	(10.2)

1 = Eating Disorders Inventory; 2 = Dissociative Experiences Scale.

EDI scores for both clinical and non-clinical groups are within expected parameters and are comparable to Garner's sample (1991). Scores for both groups are in the low range for all three subscales. DES scores for the bulimic group are somewhat higher than for other studies (e.g., Demitrack, Putnam, Brewerton, Brandt & Gold, 1990: mean DES = 16.7). However, their sample included non-bulimic eating disorder patients. The large Standard Deviation in the BMI scores in the clinical group can be accounted for by the presence of both Anorexic and BED patients. However, t-tests showed that these data did not affect results as the two groups were not significantly different.

3.3. Validation of the subliminal procedure. Only one participant claimed to have been able to identify a word. However, she claimed to see 'fat', which was not one of the cue words. Others were aware of the shape of a word (e.g., seeing a letter with a 'tail', such as a 'g' or a 'p'). However, by design, the list of twelve words presented at the end of testing (Appendix D) contained several such words. Table 2 shows that cue words were chosen by the non-clinical and clinical groups on 17% and 24% of occasions respectively. Both scores are no higher than the 25% one would predict if words were selected at chance levels. This suggests that participants were not consciously aware of the cue words.

Table 2 : Mean scores and percentages for word recognition (25% corresponds to chance levels).

	Non-Clinical (n = 26)			Clinical (n = 24)		
	Mean	(S.D.)	%	Mean	(S.D.)	%
Word Recognition	0.69/4	(0.55)	17	0.96/4	(0.69)	24

3.4. Dissociative reactivity to threat cues.

Initially, a three-way ANOVA was carried out on the data, with both Group and Order of cue presentation (i.e., neutral followed by threat and vice versa) as between-subject factors. No significant 2- or 3-way main effects involving order were found ($F < 1.0$, $p > 0.46$ in all cases). Therefore, Order was dropped as a variable, and

all subsequent ANOVAs were 2-way (Group x Cue type). Table 3 shows mean scores on the CADSS (and subscales) and standard deviations for each of the two conditions (threat versus neutral), for the non-clinical and clinical groups. The table also includes ANOVAs (Group x Cue type).

There are no previous data on equivalent means in a bulimic population, but means for the clinical group do correspond with those for other axis 1 disorders, such as PTSD (range: 14.8 – 21.8) and affective disorders (Mean = 7.5) (Bremner et al., 1998). Non-clinical means were also in the region of, but slightly higher than previous samples (Mean = 1.5), Bremner et al., 1998).

Table 3: Levels of dissociation (CADSS) and mood (HADS) among bulimic and non-clinical women, following subliminal neutral and threat cues.

Group	Non-clinical				Clinical				ANOVAs					
Cue Type	Neutral		Threat		Neutral		Threat		Group		Cue Type		Group x Cue	
Measure	M	(SD)	M	(SD)	M	(SD)	M	(SD)	F(1,48)	P	F(1,48)	P	F(1,48)	P
CADSS$_1$ Scale														
CADSS Total	4.96	(9.93)	5.00	(9.89)	14.6	(14.5)	18.5	(17.4)	10.56	.002	2.95	.05	2.83	.05
CADSS Amnesia	0.27	(0.83)	0.38	(0.85)	2.04	(2.10)	2.25	(2.52)	14.01	.001	1.57	NS	0.03	NS
CADSS Depersonalisation	1.50	(3.65)	1.46	(3.94)	3.96	(5.58)	4.88	(5.18)	5.63	.01	1.05	NS	1.24	NS
CADSS Derealisation	3.19	(5.80)	3.15	(5.39)	8.58	(8.16)	11.4	(10.4)	11.49	.001	3.16	.04	3.33	.04
HADS$_2$ Scale														
HADS Anxiety	1.80	(3.10)	1.76	(2.86)	10.8	(5.32)	11.2	(5.59)	37.84	.001	0.27	NS	0.57	NS
HADS Depression	1.73	(2.20)	1.84	(2.01)	8.08	(4.91)	8.42	(4.91)	39.29	.001	1.06	NS	0.25	NS

1 = Clinician Administered Dissociative States Scale; 2 = Hospital Anxiety and Depression Scale.

The results of the ANOVAs show that there were significant main effects of Group for the total CADSS scores and all three CADSS subscale scores. The CADSS Total and Derealisation scores also had a significant main effect of Cue type (threat versus neutral). All results were in the hypothesised directions. However, these effects for the Total and Derealisation scales were subsumed in significant interactions between Group x Cue type. To summarise, the clinical group experienced significantly greater state dissociation than the non-clinical group after being exposed to subliminal threat as opposed to neutral cues (see Graph 1). The majority of this effect appears to be due to the Derealisation subscale of the CADSS.

Graph 1: CADSS Score Means for Clinical versus Non-Clinical Groups
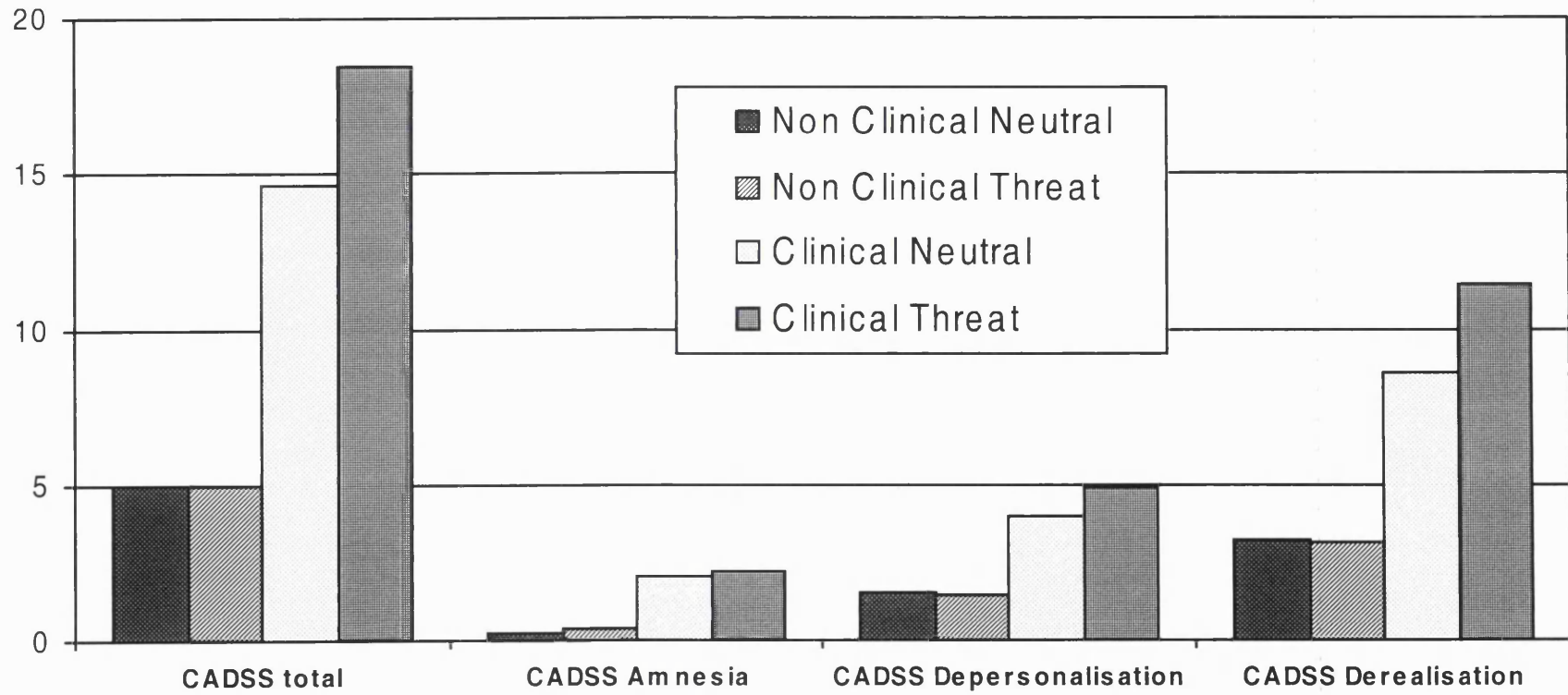
Table 3 also shows mean scores on the HADS (anxiety and depression subscales) and standard deviations for each of the two conditions, for the non-clinical and clinical groups. Means in the clinical group for depression and anxiety were approaching their clinical cut-off point of 11 - in the 'borderline case' range (8-11) defined by Zigmond & Snaith (1983). No data were collected on pre-testing levels of depression or anxiety. Non-clinical means were in the 'non-case' grouping made by Zigmond & Snaith (1983) for both scales. The ANOVAs show that there was a significant difference between the clinical and non-clinical groups in the expected direction, but that there were no significant main or interaction effects involving Cue type.

Therefore, it can be concluded that that hypothesis 1 ("The activation of negative schemas will lead to a significant increase in state dissociation in the bulimic group but in not the control group") - was supported. However, hypothesis 2 ("The activation of negative schemas will lead to a significant increase in depression and anxiety in the bulimic group but not in the control group" - was not supported.

3.5. Post-hoc Analyses: Dimensional links between dissociative reactivity and eating pathology.

Further investigation was undertaken to examine the associations between dissociative reactivity and elements of the participants' eating pathology. Dissociative reactivity was measured by calculating difference scores between threat and neutral (T – N) scores on the total and three subscale scores of the CADSS. These were correlated (Pearson's r) with BMI, the total score and three subscales of the EDI (Drive for Thinness, Body Dissatisfaction and Bulimia), and binge frequency for the clinical group. Alpha was adjusted to .01, to reduce the risk of Type 1 errors.

Table 4: Association between Dissociative Reactivity and Eating Pathology in the Clinical Group (Pearson's r).

Clinical Group	Difference scores (threat – neutral)							
	CADSS[1] Total Correlation	p	CADSS Amnesia Correlation	p	CADSS Derealisation Correlation	p	CADSS Depersonalisation Correlation	p
BMI[2]	0.115	NS	0.107	NS	0.159	NS	-0.137	NS
EDI[3] Total	0.093	NS	0.065	NS	0.065	NS	0.089	NS
EDI Drive for Thinness	-0.162	NS	-0.260	NS	-0.175	NS	0.008	NS
EDI Body Dissatisfaction	0.083	NS	0.096	NS	0.021	NS	0.132	NS
EDI Bulimia	0.175	NS	0.170	NS	0.214	NS	-0.008	NS
Binges per week	0.148	NS	0.335	NS	0.225	NS	-0.163	NS

1 = Clinician Administered Dissociative States Scale; 2 = Body Mass Index; 3 = Eating Disorders Inventory.

Table 5 : Association between Dissociative Reactivity and Eating Pathology in the Non-Clinical Group (Pearson's r).

| Non-clinical group | Difference scores (threat – neutral) | | | | | | | |
	CADSS[1] Total Correlation	p	CADSS Amnesia Correlation	p	CADSS Derealisation Correlation	p	CADSS Depersonalisation Correlation	p
BMI[2]	0.179	NS	0.198	NS	0.085	NS	0.414	.04
EDI[3] Total	-0.019	NS	0.206	NS	0.064	NS	0.049	NS
EDI Drive for Thinness	-0.162	NS	0.207	NS	-0.128	NS	-0.112	NS
EDI Body Dissatisfaction	-0.29	NS	0.166	NS	-0.055	NS	0.014	NS
EDI Bulimia	0.431	.03	0.372	NS	-0.424	.03	0.752	.001

1 = Clinician Administered Dissociative States Scale; 2 = Body Mass Index; 3 = Eating Disorders Inventory.

In the clinical group, there were no significant correlations between any element of dissociative reactivity and any aspect of eating pathology (Table 4). In the non-clinical group, there was only one significant association. High scores on the EDI Bulimia subscale were associated with high tendency to depersonalise in response to threat (Table 5).

Table 6 shows the associations of affective reactivity and eating pathology. Affective reactivity was measured in the same way as for the dissociative reactivity (i.e., by calculating difference scores between threat and neutral (T − N) condition scores on the subscales of the HADS). There was one significant result. In the non-clinical group, higher BMI scores were associated with a lower tendency towards state depression in response to threat.

Table 6: Association between Affective Reactivity and Eating Pathology (Pearson's r).

	Difference Scores (threat – neutral)							
	HADS[1] Anxiety				HADS Depression			
	Clinical Group		Non-clinical Group		Clinical Group		Non-clinical Group	
	Correlation	p	Correlation	p	Correlation	p	Correlation	p
BMI[2]	-0.283	NS	-0.266	NS	0.368	NS	-0.502	.009
EDI[3] Total	0.196	NS	-0.017	NS	0.223	NS	0.180	NS
EDI Drive for Thinness	0.138	NS	0.014	NS	-0.072	NS	-0.084	NS
EDI Body Dissatisfaction	0.051	NS	-0.026	NS	0.389	NS	0.216	NS
EDI Bulimia	0.222	NS	0.089	NS	-0.038	NS	-0.183	NS
Binges per week	0.131	NS	N/A	NS	0.064	NS	N/A	NS

1 = Hospital Anxiety and Depression Scale; 2 = Body Mass Index; 3 = Eating Disorders Inventory.

3.6. Post-hoc Analyses: Association of dissociative reactivity and trait dissociation.

A final analysis involved the investigation of the association between dissociative reactivity and the total DES-II scores. This analysis addresses the links between the tendency of an individual to experience state dissociation in response to threat cues, and a measure of their levels of trait dissociation.

Table 7: Association between Dissociative Reactivity and Trait Dissociation as measured by the DES-II (Pearson's r).

	DES-II[2] Total			
	Non-clinical		Clinical	
Measure	Correlation	P	Correlation	p
CADSS[1]				
Total	-0.231	NS	0.164	NS
Amnesia	-0.126	NS	0.301	NS
Derealisation	-0.320	NS	0.205	NS
Depersonalisation	-0.197	NS	-0.082	NS

1 = Clinician Administered Dissociative States Scale; 2 = Dissociative Experiences Scale.

Table 7 shows that there were no significant correlations. Therefore, dissociative reactivity is not associated with trait dissociation (as measured by scores on the DES-II).

CHAPTER 4

4.0. Discussion

This section begins by re-addressing the aims of the study. Secondly, a summary of the findings is presented. Thirdly, the findings are discussed in relation to the existing literature, as reviewed in the introduction section. Finally, implications for future research and clinical practice are considered.

4.1. Re-statement of the aims and hypotheses of the study

The general aim of this study was to investigate the links between threat processing, dissociation and bulimia. The first hypothesis states: The activation of negative schemas will lead to a significant increase in state dissociation in the clinical group, but not in the control group. Hypothesis two states: The activation of negative schemas will lead to a significant increase in depression and anxiety in the clinical group but not in the control group.

4.2. Summary of findings

Hypothesis 1 suggested that the activation of negative schemas (through the presentation of subliminal threat cues) would lead to a significant increase in state dissociation (as measured by the CADSS) in the bulimic group but not in the control group. Table 3 shows that there was a significant interaction (Group x Cue type) effect, indicating that the clinical group experienced significantly greater state dissociation after being exposed to subliminal threat cues, whereas the non-clinical control women were not affected in this way. This effect was principally due to

changes in the levels of state derealisation. Therefore, this hypothesis was supported.

In contrast, hypothesis 2 (influence of subliminal threat cues on mood state) was not supported. Table 3 shows no interaction effects involving the HADS scales.

Supplementary analyses were carried out to identify any dimensional links between dissociative reactivity (i.e., the difference in state dissociation in response to threat as opposed to neutral cues) and eating characteristics and trait dissociation. In the clinical group, there were no significant associations between dissociative reactivity and aspects of eating pathology. However, in the non-clinical group bulimic pathology was associated with a higher tendency to depersonalise in response to threat (Table 5). There were no significant associations between dissociative reactivity and trait dissociation (Table 7) in either group.

Affective reactivity (i.e., the difference in state depression or anxiety in response to threat as opposed to neutral cues) was not associated with any aspect of eating pathology in the clinical group. In the non-clinical group, higher BMI scores were associated with a lower tendency towards state depression in response to threat (see table 6).

4.3. Relationship to the existing literature

Several aspects of these findings are directly comparable with other research findings in the eating disorders. First, using a similar subliminal activation methodology and under the same conditions, this study has shown increases in state dissociation where previous studies have found increased eating. Patton (1992) and Gerard et al. (1993) showed that subliminal presentation of abandonment cues led to increased eating, compared to neutral cues. Waller & Mijatovich (1998) found a similar result with non-abandonment, but ego-threatening cues. Finally, Meyer &

Waller (1999) also found this result, using the same cue word as in the present study ('lonely'). All these subliminal studies used non-clinical samples, comparing women who scored high versus low on measures of eating-disordered attitudes (such as the EDI), and showed stronger effects in those who had less healthy eating. The present non-clinical sample's EDI scores would have placed them in the healthy eating attitudes group and, in accordance with the other studies, no effect was seen.

Second, there is a broad literature that shows that maladaptive coping strategies (such as bingeing) are used in response to negative affect induction (e.g., Agras & Telch, 1998), which is comparable with the effect of negative affect cues in this study.

Finally, there is a large body of literature that indicates an association between the presence of certain schemas and bulimic behaviours. Abandonment schemas are associated with bulimic behaviours, and these schemas can be effectively activated through subliminal activation (e.g., Waller & Ohanian, 1997; Waller, Waters & Hill (1997).

In addition, several other studies and findings from the literature have been supported. For example, further evidence has been provided for higher trait dissociation in bulimics. Uniquely, in this study, the same has been found for state dissociation. The ability to induce state dissociation using this experimental methodology is compatible with the findings of Bremner et al. (1998) and Leonard et al. (1999). Silverman's (1983) explanation of why subliminal activation has greater impact than supraliminal presentation is based on his claim that ego-defences such as dissociation are bypassed. However, the present study has shown that dissociation is not bypassed. Bornstein's (1992) attributional theory of subliminal activation states that, in a subliminal presentation, there is not sufficient awareness to make a 'discounting' and external

attribution. Instead the affect is attributed internally and hence has greater impact. Therefore, Bornstein's (1992) theory would appear to account for the results more successfully than Silverman's (1983) theory.

In one respect, the present findings conflict with those of an earlier study. Dissociative reactivity was not associated with DES-II scores in the present study. In contrast, Leonard et al. (1999) showed that high DES-II scorers showed a greater increase in state dissociation than low DES-II scorers. However, it should be noted that they used a non-clinical sample, a different state dissociation measure (the ADI), and a more 'mechanistic' (rather than schema-driven) means of inducing dissociation.

4.4. Relationship to existing theory

Previous research has shown that subliminal activation of schemas (resulting in negative affect) leads to increased maladaptive coping strategies, such as overeating. The present study has shown that subliminal activation also results in state dissociation (though not in any detectable change in state affect). This convergent evidence suggests that bingeing and dissociation share the function of (or are involved in) blocking negative affect. This section will discuss the current study's findings in relation to existing models and theories, in order to determine which of these are supported. First, Chandarana & Malla's (1989) theory is addressed. Second, an attempt is made to distinguish between the other two models (Everill & Waller, 1995b; Heatherton & Baumeister, 1991). This effort will involve some speculation and need for future research, building on the results of the present study. It should be reiterated at this point that the present study is the first stage of many potential studies testing the relationship between negative affect, dissociation and bulimic behaviour. What has been shown here is that state dissociation is an integral part of the process,

and that it requires consideration in that future work.

4.4.1. Evidence regarding Chandarana & Malla (1989)

In terms of the competing models, the Chandarana & Malla model (1989) is cast into doubt. This model states that dissociation is a by-product of bingeing. However, the present results show that dissociation is triggered in the absence of bingeing (or any other dissociation-related behaviour).

4.4.2. Evidence regarding Everill & Waller (1995b)

The present findings (dissociation is triggered in the absence of bingeing) are consistent in terms of structure (i.e., the order and function of the constructs) with two out of the three interpretations of Everill & Waller's model (1995b). These will be discussed below. However, more research is needed in order to test the model's claims regarding the dissociative process (see section 4.4.2.2).

4.4.2.1. Structure. The first two interpretations (dissociation and bingeing in parallel; dissociation and bingeing sharing the function of blocking awareness as a function of severity and/or thematic specificity) are consistent with the present findings. However, the third interpretation (bingeing takes over completely from dissociation as the coping response to threat in bulimia) has not been supported, given the presence of dissociation in the current study.

4.4.2.2. Dissociative process. All of the Everill & Waller (1995b) interpretations work on the assumption that the dissociative process is schema-driven (see section 1.7.3). They also assume that there is unity between dissociative schemas, trait dissociation

and high DES-II scores. Finally, they assume dissociative schemas (of sufficient strength or degree of elaboration to drive the dissociative process) occur relatively frequently in non-clinical populations. The following subsection considers the assumption that dissociative schemas are equivalent to trait dissociation and high DES-II scores in light of current findings, and concludes that the dissociative process is more likely to be state- than schema-driven.

4.4.2.3. Equivalence of dissociative schemas, trait dissociation, and high DES-II scores

Waller et al. (1995) equated high DES-II scores with more elaborate dissociative schemas, such that the more elaborate the schema, the greater the dissociative reactivity. Thus they would predict that high DES-II scores would predict dissociative reactivity. However, the present findings suggest that this assumption is in need of further investigation, as Table 7 shows that DES scores are not predictive of dissociative reactivity. Therefore, it can be deduced that the dissociative effect in this study was not schema-driven (lending support to a state-driven dissociative process), or that the assumption is incorrect.

4.4.3. Evidence regarding Heatherton & Baumeister (1991)

This study provides preliminary support for Heatherton & Baumeister's (1991) model, both in terms of structure and process. Future studies (see section 4.5) will test the structure of that model in full. However, in terms of process, evidence appears to lean towards a state-driven (see section 1.7.1) dissociative process - uncomplicated by assumptions regarding dissociative schemas.

4.4.4. Implications of the current findings for current conceptualisations of bulimia

If the Heatherton & Baumeister (1991) model is accurate, it is possible that the process leading up to bulimic behaviour is more central to the problem than the characteristics of the behaviour itself. Affect-driven models describe bulimics as bingeing and purging to reduce intolerable affect. The findings of this research suggest that they are dissociating (via cognitive narrowing) in response to threat, in order to reduce intolerable affect. Thus, cognitive processing is reduced and inhibition is relaxed, making ego-dystonic behaviours (such as bingeing) more likely. In the case of bulimia, bingeing is the expression of disinhibition, as opposed to a number of other possibilities (such as substance abuse, self-harm, promiscuity or stealing). Therefore, by extension, the bingeing and eating aspects of bulimia are likely to be more incidental and less of a central element of the pathology than dissociation. Evidently the reasons behind why the individual chooses food as opposed to other expressions of disinhibition will be of some importance to formulation. However, the origin, understanding and control of dissociation could prove to be more crucial in terms of treatment and prognosis (see section 4.7).

4.4.5. Impact of threat on state affect

This section discusses findings regarding the second hypothesis in light of existing theory. It is queried whether an effect might have occurred, but that the measures used in the current study did not have sufficient sensitivity to detect it. Existing theory suggests two possible outcomes. Subliminal studies such as Patton (1992) and Meyer & Waller (1999) imply that the threat cue activates the abandonment schema, giving rise to intolerable affect. The overeating is seen as a maladaptive coping response designed to block this affect. Under this assumption, one

would expect affect such as anxiety and depression to increase in the threat condition (Hickson, 1999). However, in a second outcome, dissociation is also a coping response designed to reduce awareness of intolerable affect. Therefore, under this assumption, one might expect the levels of affect to rise and subsequently fall (as a result of the dissociation). One would expect this effect to be greater in the threat condition. The current design does not allow these possibilities to be distinguished (see section 4.5).

4.5. Research Implications

This section will discuss the many additional research questions generated by these findings, for the consideration of future researchers. There will also be a discussion of limitations of the current study and suggested improvements.

4.5.1 Limitations of the present study

This study has a number of limitations, which could be addressed in future research. First, the population in this study and the methodologies used were different to that in previous studies that have manipulated state dissociation. For example, Bremner et al. (1998) found a considerably larger difference in CADSS scores between neutral and threat conditions (CADSS means differed by 14 points, as opposed to 4 in the current study). However, they used PTSD patients and a different induction procedure, which might account for some of the difference. Increasing the number of cue presentations might address part of this methodological difference, but they also used a no-cue condition (as opposed to a neutral condition) in comparison to their threat condition. Leonard et al. (1999) showed that dissociation can be induced in the laboratory in a number of ways independent of cue-type). Their paradigm of 'dot-staring' is most similar to this study's procedure (where the participants were

asked to fixate on a row of apparently flickering x's). Leonard et al. found some degree of dissociation (as measured by an alternative measure of state dissociation - the ADI) in a non-clinical sample, when compared to a no-cue condition. Leonard's 'dot-staring' paradigm was the least effective of the three methods employed. This was attributed to, amongst other factors, a lack of 'scientific credibility'. It is possible that the current study's procedure did not suffer from this factor. A future study might control for this procedurally-induced dissociation by introducing a pre-experiment completion of CADSS (and indeed HADS) measures.

Second, the HADS measure is not conventionally used to measure state as opposed to trait affect. Some of the wording (e.g., 'I can enjoy a good book or radio or TV programme') strongly implies trait affect and some participants found this confusing in spite of instruction. However, there are other well-validated measures of state affect such as the State Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983) and the Positive Affect Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). These were not chosen in the interest of keeping the measurement battery as brief as possible. It is possible that these measures (administered at multiple points during the testing) might be more sensitive to hypothesised changes in future studies. Future research might employ an active search paradigm, where the participant is not allowed sufficient time to dissociate. It is postulated that any change in affect would be more easily measurable under these conditions.

Finally, it is possible that some caution needs to be advised when interpreting the self-report scores recorded by a bulimic sample. Black-and-white (or dichotomous) thinking is a widely reported characteristic in individuals with eating disorders. This might result in more extreme appraisal of states, and lead to higher

scores and differences. Heatherton & Baumeister's Escape Theory (1991) can also explain more extreme scores as cognitive narrowing (dissociation) is hypothesised to result in a general reduction in cognitive processing and rational thought such as might result in 'black-and-white' thinking.

4.5.2   Future research directions

Heatherton & Baumeister (1991) suggest that dissociation makes bingeing more likely by lowering the level of cognitive processing and thus relaxing inhibitions. Therefore, one would predict that state dissociation will precede overeating, and that greater levels of dissociation will be associated with greater levels of overeating. In contrast, the Everill & Waller model (1995b) suggests that dissociation is used as an initial response to threat, but that its affect-blocking function is taken over or shared by bingeing when the affect is stronger. Therefore this model predicts that greater levels of dissociation will be associated with less overeating.

Future studies could test these theories by combining the methodologies of the current study with those of studies such as Meyer & Waller (1999) or Waller & Mijatovich (1998), measuring the impact of subliminal cues on both state dissociation and eating.

A further question is the period of time that state dissociation lasts in response to subliminal threat presentation. Some participants commented that they felt more dissociative during the presentations than immediately after (while completing the questionnaires). However, others reported experiencing dissociation for some time after the end of testing. It would also be useful to determine whether dissociation serves a more positive function on mood state than bulimic or other impulsive behaviours, since such behaviours are likely to result in self-defeating negative

cognitions (such as 'I am disgusting'), as often reported by bingers after the initial affect reduction. With a larger sample, it would be valuable to determine whether there are premorbid predictors of who has a greater reactivity to such threat cues (e.g., those with high levels of trait dissociation, trauma history, gender differences, age, diagnosis, presence of comorbid behaviours, stage of treatment).

4.6. Clinical Implications

The present results show that state dissociation is an integral part of the bulimic process, whether it facilitates overeating or shares affect-blocking functions. Therefore, clinical work might need to shift some emphasis from food, weight and shape issues to three overlapping key areas - dealing with dissociation itself, identifying the origin of dissociation, and developing more adaptive ways of coping with affect. Indeed, a number of authors (e.g., Coker et al., 1993; Janet, 1889) have asserted that if trauma schemata and dissociation are not targeted in treatment, bulimic behaviour will merely be replaced by other tension-reducing (or impulsive) behaviours and increased dissociative tendencies. Similarly, Heatherton & Baumeister (1991) state that when behaviours serve a common blocking function, the focus of treatment must be on the cognitive processes and causes that make blocking necessary, rather than merely focusing in on stopping the binges.

4.6.1. Dealing with dissociation

Aside from investigating and modifying the origin of the dissociation (which will be discussed in the next section), there are a number of strategies for dealing with dissociation in therapy. In relevant cases, it might be important to address the concept of dissociation near the start of treatment. This might involve giving the patient self-

report questionnaires (such as the DES-II). Assessment might include functional analysis of dissociative episodes in order to help identify process and triggers. Therapists should be mindful of the many different manifestations of dissociation in the room (e.g., changes in affect, absences or repetitive mannerisms), and negotiate with the patient ways of bringing these to mutual attention. Kennerley (1996) refers to patients 'spacing out' and forgetting parts of the session. A potential strategy to help avoid 'wasted' sessions is to tape record them, for the patient to listen to at home.

Once dissociating, the patient can be helped by grounding techniques. These can be rehearsed in-session for use either in the therapy room or at home. Kennerley (1996) reviews several methods of grounding. These include refocusing attention on various aspects of the immediate environment or a significant 'grounding object' (such as a stone or a herb bag). Alternatively, the patient can have particular words or phrases rehearsed, which can be repeated like a mantra. A grounding image can be of use as a distraction, as long as it is fully elaborated and encompasses as many sensory modalities as possible. Finally, cognitive errors and biases identified at assessment as being inherent in the trigger to dissociation (e.g., 'all men are rapists') can be considered using conventional CBT cognitive restructuring techniques.

4.6.2. The origins of dissociation

There are a several ways of investigating the origins of dissociation. Trauma is generally conceptualised as being responsible for the formation of a schema and the subsequent activation of negative affect. The nature and severity of the trauma varies from individual to individual. This includes a range of experiences, from emotional abuse (such as repeated invalidation or abandonment) through to serious sexual abuse. Schema-focused cognitive behavioural therapy (SFCBT) looks at the formation and

maintenance of schemas and considers different ways of treating them. Padesky (1993) and Young (1999) discuss ways of loosening prejudicial schematic beliefs with the help of continuum work and flashcards. More experiential techniques for modifying the beliefs include image rescripting (Arntz & Weertman, 1999; Smucker & Niederee, 1995) and image habituation training (IHT) with storyline alteration (Vaughan & Tarrier, 1992).

Image rescripting is commonly used in the treatment of PTSD, and involves the accessing and modification of traumatic memories with an emphasis on turning victimisation imagery into mastery imagery. Several differing procedures work along similar lines initially - re-living of the traumatic event, and re-activating the original affect by means of multi-sensorial description and elaboration of the scene. The second stage involves an adult (preferably the patient) intervening in the original scene, so as to rescue the patient as a child, to drive away any hostile element, and to comfort and reassure. A third stage (introduced by Arntz et al., 1999) involves the patient re-experiencing the interventions made by the adult in the second stage, but as the original child. There has been some success with image rescripting with bulimic patients (Ohanian, 2002).

Image Habituation Training involves tape-recording an account of the traumatic event. The patient then engages in self-directed exposure to the tape and the accompanying affect. A 'storyline alteration' is introduced to increase the patient's sense of mastery.

4.6.3. Coping with affect

Dissociation and bingeing have each been shown to block intolerable affect. Future therapy might be advised to concentrate on the causes of this poor distress

tolerance, and on developing ways of coping. Schema studies (e.g., Waller et al., 2000) and models (e.g., Waller, under consideration) consider the emotional inhibition schema to be important in this respect. This schema comes about due to an invalidating environment, where emotions are subordinated, ignored or actively discouraged (Young, 1994). SFCBT (see above) might be a useful way of approaching this problem. At the start of therapy, in conjunction with the introduction of the concept of dissociation, it might be useful to anticipate and acknowledge possible problems dealing with affect. The therapist and patient would work collaboratively on strategies for addressing this problem.

Emotional regulation difficulties are common in Borderline Personality Disorder (BPD) patients. Dialectical Behaviour Therapy (DBT) is the treatment of choice for this patient group (Linehan, 1998). Linehan explains pathological behaviour (such as self-harm) as faulty attempts at affect-regulation. Certain modules in DBT might be of use to bulimic patients. Wiser & Telch, (1999) employ and adapt three of the four modules in treating binge-eating disorder. 'Mindfulness' is described as a tool for helping the patient to increase awareness and acceptance of experience. Mindfulness meditation teaches that emotional experience is transitory, and reflects only a part of their reality in any given moment. Patients learn to observe their emotional and cognitive experience in a non-judgemental way. 'Distress Tolerance' involves learning more about how to accept emotions, as opposed to wanting to block them. Techniques in this module are similar to distraction and grounding methods, and the substitution of more adaptive self-soothing strategies. Finally, the 'Emotional Regulation' module teaches the patient five things: to understand and identify the various components of an emotional response; to determine the function of emotions; to reduce vulnerability to unpleasant emotions; to build on positive emotional

experience; and to change emotional states. Preliminary studies investigating the efficacy of DBT in the treatment of binge-eating disorder offer promising findings (Safer, Lively, Telch & Agras, 2002; Safer, Telch & Agras, 2001).

4.7   Conclusion

This study has shown that, among bulimic women, state dissociation is activated by the presentation of subliminal abandonment cues. This finding has implications for both the conceptualisation and treatment of bulimia, with dissociation being more central to the bulimic process than has previously been thought. However, more work needs to be done to understand the exact dissociative processes involved, and future research questions have been generated accordingly.

5.0. References

Agras, W.S., & Telch, C.F. (1998) The effects of caloric deprivation and negative

affect on binge-eating in obese binge-eating disordered women. *Behaviour*

Therapy 29, 491-503.

Agras, W.S., Rossiter, E.M., Arnow, B., Schneider, J.A., Telch, C.F., Raeburn,

S.D., Bruce, B., Perl, M., & Koran, L.M. (1992) Pharmacologic and

cognitive-behavioural treatment for bulimia nervosa; a controlled comparison.

American Journal of Psychiatry, 149, 82-87.

Agras, W.S., Walsh, B.T., Fairburn, C.G., Wilson, G.T., & Kraemer, H.C.

(2000). A multicenter comparison of cognitive, behavioural therapy and

interpersonal therapy for bulimia nervosa. *Archives of General Psychiatry, 57,*

459-466.

American Psychiatric Association (1994). *Diagnostic and statistical manual of*

mental disorders (4ᵗʰ ed). Washington, D.C: American Psychiatric

Association.

Anderson, G., Yasenik, L., & Ross, C.A. (1993) Dissociative experiences and

disorders among women who identify themselves as sexual abuse survivors.

Child Abuse and Neglect, 17, 677-686.

Andrews, B. (1997). Bodily shame in relation to abuse in childhood and bulimia: a

preliminary investigation. *British Journal of Clinical Psychology, 36,* 41-49.

Arntz, A., & Weertman, A. (1999). Treatment of childhood memories: theory and

practice. *Behaviour Research and Therapy 37,* 715-740.

Barlow, D.H., & Durand, V.M. (1999). *Abnormal Psychology: an integrative*

approach. Pacific Grove, CA:Brooks/Cole.

Barter, G. & Waller, G. (under consideration) *The Impact of Subliminal Abandonment and Unification Cues on Eating Behaviour.*

Bauer, B.G., & Anderson, W.P. (1989). Bulimic beliefs: food for thought. *Journal of Counseling and Development, 67,* 416-419.

Beck, A.T. (1967). *Depression: clinical, experimental and theoretical aspects.* New York: Harper & Row.

Beck, A.T & Freeman, A. (1990). *Cognitive therapy of personality disorders.* New York: Guilford Press.

Bernstein, F.M., & Putnam, F.W. (1986). Development, reliability and validity of a dissociation scale. *Journal of Nervous & Mental Disease, 174,* 727-735.

Beumont, P.J.V., & Abraham, S.F. (1983). Episodes of ravenous overeating or bulimia: their occurrence in patients with anorexia and with other forms of eating disorder. In P.L.Darby, P.E. Garfinkel, D.M. Garner & D.V. Coscina (Eds.), *Neurology and neurobiology, 3, anorexia nervosa: recent developments in research,* New York: Alan R. Liss, Inc.

Bjelland, I., Dahl, A.A., Haug, T.T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale. An updated literature review. *Journal of Psychosomatic Research, 52,* 69-77.

Bornstein, R.F. (1989). Exposure and affect: overview and meta-analysis of research, 1968-1987. *Psychological Bulletin 106,* 161-174.

Bornstein, R.F. (1990). Critical importance of stimulus unawareness for the production of subliminal psychodynamic activation effects: a meta-analytic review. *Journal of Clinical Psychology 46,* 201-210.

Bornstein, R.F. (1992). Critical importance of stimulus unawareness for the production of subliminal psychodynamic activation effects: an attributional model. *Journal of Nervous & Mental Disease 180,* 69-76.

Bornstein, R.F., & D'Agostino, P.R. (1990). A perceptual fluency/attributional model of the mere exposure effect. *Manuscript submitted for publication.*

Bornstein, R.F., Leone, D.R., & Galley, D.J. (1987). The generalizability of subliminal mere exposure effects: influence of stimuli perceived without awareness on social behaviour. *Journal of Personality & Social Psychology 53,* 1070-1079.

Bowlby, J. (1969). *Attachment and loss. Volume I.* New York: Basic Books.

Braun, B.G. & Sachs, R.G. (1985). The development of multiple personality disorder: predisposing, precipitating, and perpetuating factors. In *Childhood Antecedants of Multiple Personality Disorder* (Ed R.P. Kluft). Washington, DC: American Psychiatric Press, p 37-64.

Braun, D.L., Sunday, S.R., & Halmi, K.A. (1994). Psychiatric comorbidity in patients with eating disorders. *Psychological Medicine, 24,* 859-867.

Bremner, J.D., Krystal, J.H., Putnam, F.W., Southwick, S.M., Marmar, C., Charney, D.S., & Mazure, C.M. (1998). Measurement of Dissociative states with the Clinician-Administered Dissociative States Scale (CADSS). *Journal of Traumatic Stress, 11,* 125-136.

Briere, J. (1992) *Child Abuse Trauma. Theory and Treatment of the lasting effects.* London: Sage.

Bushnell, J.A., Wells, J.E., Hornblow, A.R., Oakley-Browne, M.A., & Joyce, P. (1990). Prevalence of three bulimia syndromes in the general population. *Psychological Medicine, 20,* 671-680.

Butterfield, P.S., & LeClair, S. (1988). Cognitive characteristics of bulimic and

drug-abusing women. *Addictive Behaviors, 13,* 131-138.

Carlson, E.B., & Putnam, F, W. (1993). An update on the Dissociative Experiences

Scale. *Dissociation, 6,* 16-27.

Carver, C.S., & Scheier, M.F. (1981). *Attention and self-regulation: A control*

theory approach to human behaviour. New York: Springer-Verlag.

Cattanach, L., & Rodin, J. (1988). Psychosocial components of the stress process in

bulimia. *International Journal of Eating Disorders, 7,* 75-88.

Chandarana, P. & Malla, A (1989) *Bulimia and dissociative states: A case report.*

Canadian Journal of Psychiatry, *147,* 137-139.

Channon, S., Helmsley, D., & de Silva, P. (1988). Selective processing of food

words in anorexia nervosa. *British Journal of Clinical Psychology, 27,* 259-

260.

Coker, S., Vize, C., Wade, T., & Cooper, P. (1993). Patients with bulimia nervosa

who fail to engage in cognitive behaviour therapy. *International Journal of*

Eating Disorders 13, 35-40.

Cooper, P.J., & Fairburn, C.G. (1986). The depressive symptoms of bulimia

nervosa. *British Journal of Psychiatry, 148,* 268-274.

Cooper, M.J., & Todd, G. (1997). Selective processing of three types of stimuli in

eating disorders. *British Journal of Clinical Psychology, 36,* 279-281.

Coons, P.M., & Milstein, V. (1986). Psychosexual disturbances in multiple

personality disorder: characteristics, etiology, and treatment. *Journal of*

Clinical Psychiatry, 47, 106-110.

Demitrack, M.A., Putnam, F.W., Brewerton, T.D., Brandt, H.A., & Gold, P.W. (1990). The relation of clinical variables to dissociative phenomena in eating disorders. *American Journal of Psychiatry, 147,* 1184-1188.

Everill, J.T., & Waller, G. (1995a). Disclosure of sexual abuse and psychological adjustment in female undergraduates. *Child Abuse & Neglect, 19,* 93-100.

Everill, J.T. & Waller, G. (1995b) *Dissociation and Bulimia: Research and Theory* European Eating Disorders Review 3, 129-147

Everill, J.T., Waller, G., & Macdonald, W. (1995). Dissociation in bulimic and non-eating disordered women. *International Journal of Eating Disorders, 17,* 127-134.

Fairburn, C.G. (1981). A cognitive-behavioural approach to the treatment of bulimia. *Psychological Medicine 11, 707-711.*

Fairburn, C.G. (1997). Eating Disorders. In: D.M. Clark & C.G. Fairburn (Eds.) *Science and Practice of Cognitive Behavioural Therapy.* Oxford: Oxford University Press.

Fairburn, C.G. (2001). *A new 'transdiagnostic' cognitive behavioural treatment for eating disorders.* Paper presented at the British Association of Behavioural and Cognitive Psychotherapy conference, Glasgow, UK, July.

Fairburn, C.G., & Cooper, P.J. (1996). Eating Disorders. In K.Hawton, P.M.Salkovskis, J.Kirk & D.M.Clark (Eds.), *Cognitive Behaviour Therapy for psychiatric problems: a practical guide.* New York: Oxford Medical Publications.

Fairburn, C.G., Cooper, Z., & Shafran, R. (2003) Cognitive behaviour therapy for eating disorders: a transdiagnostic theory and treatment. *Behaviour Research & Therapy 41,* 509-528.

Fairburn, C.G., Marcus, M.D, & Wilson, G.T. (1993). Cognitive-behavioural therapy for binge eating and bulimia nervosa: a comprehensive treatment manual. In C.G. Fairburn & G.T. Wilson (Eds.), *Binge eating: Nature, assessment and treatment (pp.361-404).* New York: Guilford Press.

Fairburn, C.G., Norman P.A., Welch, S.L., O'Connor, M.E., Doll, H.A., & Peveler, R.C. (1995). A prospective study of outcome in bulimia nervosa and the long-term effects of three psychological treatments. *Archives of General Psychiatry, 52,* 304-312.

Fairburn, C.G., & Walsh, B.T. (2002). Atypical eating disorders. In C.G. Fairburn & K.D. Brownell (Eds.) *Eating disorders and obesity: a comprehensive handbook.* New York: Guilford Press p171-178.

Fallon, A. & Bunce, S. (2000). The psychoanalytic perspective. In K.Miller & J.S. Mizes *Comparative treatment of eating disorders.* London: Free Association Books p82-128.

Faul, F., & Erdfelder, E. (1992). A priori, post-hoc & compromise power analysis for MS-DOS (computer program). Bonn, FRG: Bonn University, Department of Psychology.

Favaro, A., & Santonastaso, P. (1998). Impulsive and compulsive self-injurious behaviour in bulimia nervosa: prevalence and psychological correlates. *Journal of Nervous and Mental Disease 186,* 157-165.

Feldman-Summers, S., & Pope, K.S. (1994). The experience of 'forgetting' childhood abuse: a national survey of psychologists. *Journal of Consulting & Clinical Psychology, 62,* 636-639.

Fichter, M.M., Liebl, K., Rief, W., Brunner, E., Schmidt-Auberger, S., & Engel, R.R. (1991). Fluoxetine versus placebo: a double-blind study with bulimic inpatients undergoing intensive psychotherapy. *Pharmacopsychiatry, 24,* 1-7.

Finkelhor, D. (1988). The trauma of child sexual abuse. In: *The lasting effects of child sexual abuse* (Ed G.Wyatt) Newbury Park: Sage, pp 61-82.

Finkelhor, D., & Brown, A. (1985). The traumatic impact of child sexual abuse: a conceptualisation. *American Journal of Orthopsychiatry 55,* 530-541.

Friedrich, W.N. (1990). *Psychotherapy of sexually abused children and their families.* New York: WW Norton.

Frischholz, E.J., Lipman, L.S., Braun, B.G., & Sachs, R.G. (1992). Psychopathology, hypnotizability, and dissociation. *American Journal of Psychiatry, 149,* 1521-1525.

Garfinkel, P.E. (1995). Classification & Diagnosis of eating disorders. In K.D. Brownell & Fairburn, C.G. (Eds.), *Eating disorders and obesity: A comprehensive handbook (pp125-134).* New York: Guilford.

Garner, D.M. (1991). *Eating Disorders Inventory-2.* Odessa, FL; Psychological Assessment Resources

Garner, D.M., Olmsted, M.P., Bohr, Y., & Polivy, J. (1982) The eating attitudes test: psychometric features and clinical correlates. *Psychological Medicine, 12,* 871-878.

Garner, D.M., Olmsted, M.P., & Polivy, J. (1983). Development and validation of a multidimensional Eating Disorders Inventory for anorexia and bulimia. *International Journal of Eating Disorders 2,* 15-34.

Gerard, H.B., Kupper, D.A., & Nguyen, L. (1993). The causal link between depression and bulimia: counterposing two theories of mental development. In

J.M./ Masling, R.F. Bornstein (Eds.) *Psychoanalytic perspectives on psychopathology. (pp. 225-251).* Washington: American Psychological Association.

Goldberg, P. (1995). 'Successful' dissociation, pseudovitality and inauthentic use of the senses. *Psychoanalytic dialogues, 5(3),* 493-510.

Grilo, C.M. (2002). Binge Eating Disorder. In C.G. Fairburn & K.D. Brownell (Eds.) *Eating disorders and obesity: a comprehensive handbook.* New York: Guilford Press.

Grilo, C.M., Shiffman, S., & Carter-Campbell, J.T. (1994). Binge eating antecedents in normal-weight non-purging females: is there consistency? *International Journal of Eating Disorders, 16,* 239-249.

Hastie, R. (1984). Causes and effects of causal attribution. *Journal of Personality & Social Psychology 46,* 44-56.

Heatherton, T.F. & Baumeister ,R.F. (1991) Binge eating as escape from self Awareness. *Psychological Bulletin 110,* 86-108

Herzog, D.B., Norman, D.K., Rigotti, N.A., & Pepose, M. (1986). Frequency of bulimic behaviours and associated social maladjustment in female graduate students. *Journal of Psychiatric Research, 20 ,* 355-361.

Herzog, W., Rathner, G., & Vandereycken, W. (1992). Long-term course of anorexia nervosa: a review of the literature. In W. Herzog, H.C. Deter, & W. Vandereycken (Eds.), *The course of eating disorders: Long-term follow up studies of anorexia and bulimia nervosa* (pp15-29). New York; Springer-Verlag.

Hickson, E. (1999). The impact of subliminal abandonment cues on drinking

behaviour. *Unpublished Clinical Psychology doctoral dissertation, University*

of Southampton, Southampton, UK.

Hilgard, E.R. (1972). Evidence for a developmental-interactive theory of hypnotic

susceptibility. In E. Fromm & R.E. Shor (Eds.) *Hypnosis: research*

developments and perspectives. Chicago: Aldine Atherton.

Hilgard, E.R. (1974). Toward a neo-dissociation theory: multiple cognitive controls

in human functioning. *Perspectives in Biology and Medicine, 17,* 301-316.

Hilgard, E.R. (1977). *Divided consciousness: multiple controls in human thought*

and action. New York: Wiley.

Hoek, W.H. (2002). Distribution of Eating Disorders. In C.G. Fairburn & K.D.

Brownell (Eds.) *Eating disorders and obesity: a comprehensive handbook.*

New York: Guilford Press p233-238.

Jacobs, W.J., & Nadel, L. (1985). Stress-reduced recovery of fears and phobias.

Psychological Review 92, 512-531.

James, W. (1983). *The principles of psychology.* Cambridge, MA: Harvard

University Press.

Janet, P. (1889). *L'Automatisme psychologique (psychological automatisms).* Paris:

Alcan.

Janet, P. (1907). *The major symptoms of hysteria.* London & New York: Macmillan.

Janet, P. (1925). *Psychological healing.* New York: Macmillan Co.

Jehu, D. (1988). *Beyond sexual abuse: therapy with women who are childhood*

victims. Chichester: Wiley.

Johnson, C., & Larson, R. (1982). Bulimia nervosa: an analysis of moods and

behaviour. *Psychosomatic Medicine 44,* 341-351.

Katzman, M.A., & Wolchik, S.A. (1984). Bulimia and binge eating in college

women: a comparison of personality and behavioural characteristics. *Journal

of Consulting & Clinical Psychology, 53,* 423-428.

Kennerley, H. (1996). Cognitive therapy of dissociative symptoms associated with

trauma. *British Journal of Clinical Psychology, 35,* 325-340.

Kennerley, H. (1997). Managing complex eating disorders using schema based

cognitive therapy. Paper presented at the British Association of Behavioural

and Cognitive Psychotherapy conference, Canterbury UK, July.

Kihlstrom, J,F. (1993). The continuum of consciousness. *Consciousness and

Cognition, 2,* 334-354.

Laberg, J.C., Wilson, G.T., Eldredge, K., & Nordly, H. (1991). Effects of mood on

heart rate, reactivity in bulimia nervosa. *International Journal of Eating

Disorders 10,* 169-178.

Lacey, J.H. (1986). Pathogenesis. In L.J.Downey, J.C. Malkin, *Current approaches:

bulimia nervosa* (pp.17-26). Southampton: Duphar.

Leitenberg, H., Rosen, J. C., Wolf, J., Vara, L.S., Detzer, M.J., & Srebnik, D.

(1994). Comparison of cognitive-behaviour therapy and desimipramine in the

treatment of bulimia nervosa. *Behaviour Research & Therapy, 32,* 37-46.

Leonard, K.N., Telch, M., & Harrington, P.J. (1999). Dissociation in the

laboratory: a comparison of strategies. *Behaviou8r Research & Therapy, 37,*   49-

61.

Leung, N., Thomas, G.V., & Waller, G. (2000). The relationship between parental

bonding and core beliefs in anorexic and bulimic women. *British Journal of

Clinical Psychology 39,* 203-213.

Linehan, M.M. (1998). An illustration of dialectical behaviour therapy. *In Session* *4*, 21-44.

Ludwig, A.M. (1983). The Psychobiological functions of dissociation. *American Journal of Clinical Hypnosis, 26* , 93-99.

Lundholm, J.K., & Anderson, D.F. (1986). Eating disordered behaviors: a comparison of male and female university students. *Addictive Behaviors, 11*, 193-196.

Mandler, G., Nakamura, Y., & Van Zandt, B.J.S. (1987). Nonspecific effects of exposure to stimuli that cannot be recognized. *Journal of Experimental Psychology (Learning, Memory & Cognition) 13*, 646-648.

McGinn, L.K., & Young, J.E. (1996). Schema-focused therapy. In P.Salkovskis (Ed.) *Frontiers of cognitive therapy.* New York: Guilford p182-208.

McGinn, L.K., Young, J.E., & Sanderson, W.C. (1995). When and how to do longer-term therapy without feeling guilty *Cognitive & Behavioural Practice, 2*, 187-212.

McManus, F. & Waller, G. (1995). A functional analysis of binge-eating. *Clinical Psychology Review 15*, 845-863.

McManus, F., Waller, G., & Chadwick, P. (1996). Biases in the processing of different forms of threat in bulimic and comparison women. *Journal of Nervous and Mental Disease, 184*, 547-554.

Meyer, C., & Waller, G. (1999). The impact of emotion upon eating behaviour: the role of subliminal visual processing of threat cues. *International Journal of Eating Disorders 25*, 319-326.

Meyer, C., Waller, G., & Waters, A. (1998). Emotional states and bulimic psychopathology. In H.W. Hoek, J.L. Treasure & M.A. Katzman (Eds.)

Neurobiology in the treatment of eating disorders.(pp. 271-289) John Wiley & Sons Ltd.

Mizes, J.S. (1985). Bulimia: A review of its symptomatology and treatment. *Advances in Behaviour Research and Therapy, 7,* 91-142.

Morrison, N. (2000). Schema-focused cognitive therapy for complex long-standing problems: a single case study. *Behavioural and Cognitive Psychotherapy 28,* 269-283.

Mykletun, A., Stordal, E., & Dahl, A.A. (2001). Hospital Anxiety and Depression (HAD) scale: factor structure, item analysis and internal consistency in a large population. *British Journal of Psychiatry, 179,* 540-544.

Nijenhuis, E.R.S., Spinhoven, P., Van Dyck, R., Van der Hart, O., & Vanderlinden, J. (1998). Degree of somatoform and psychological dissociation in dissociative disorder is correlated with reported trauma. *Journal of Traumatic Stress, 11,* 711-730.

Nijenhuis, E.R.S., & Van der Hart, O. (1999). Forgetting and re-experiencing trauma. In j. Goodwin & R. Attias (Eds.) *Splintered reflections: images of the body in trauma.* New York: Basic Books.

Nijenhuis, E.R.S., & Vanderlinden , J. (1995). Similarities between animal and human defence to trauma. *Tijdschift voor Psychiatre, 38,* 135-149.

Ohanian, V. (2002). Imagery rescripting within cognitive behaviour therapy for bulimia nervosa: an illustrative case report. *International Journal of Eating Disorders 31,* 352-357.

Pettinati, H.M., Horne, R.L., & Staats, J. M. (1985). Hypnotizability in patients with anorexia nervosa and bulimia. *Archives of General Psychiatry, 42,* 1014-1016.

Padesky. C (1993). Schema as self-prejudice. *International Cognitive Newsletter 5/6,* 16-17.

Parry-Jones, B.A., & Parry-Jones, W.L. (1991). Bulimia: An archival review of its history in psychosomatic medicine. *International Journal of Eating Disorders, 10,* 129-143.

Patton, C.J. (1992). Fear of abandonment and binge-eating: a subliminal psychodynamic activation investigation. *Journal of Nervous & Mental Disease 180,* 484-490.

Pitts, C., & Waller, G. (1993). Self-denigratory beliefs following sexual abuse: association with the symptomatology of bulimic disorders. *International Journal of Eating Disorders, 13,* 407-410.

Polivy, J., Herman, C.P., & Garner, D.M. (1988). Cognitive assessment. In D.M. Donavan & G.A.Marlatt (Eds.) *Assessment of addictive behaviours (pp. 274-295).* New York: Guilford Press.

Polivy, J., Herman, C.P., Hackett, R., & Kuleshnyk, I. (1986). The effects of self-attention and public attention on eating in restrained and unrestrained subjects. *Journal of Personality & Social Psychology 50,* 1253-1260.

Pomeroy, C. (1996). Anorexia nervosa, bulimia nervosa, and binge eating disorder: Assessment of physical status. In J.K.Thompson (Ed), *Body image, eating disorders, and obesity* (pp 177-203). Washington, DC: American Psychological Association.

Pomeroy, C., & Mitchell, J.E. (2002). Medical complications of anorexia nervosa and bulimia nervosa. In C.G. Fairburn & K.D. Brownell (Eds.) *Eating disorders and obesity: a comprehensive handbook.* New York: Guilford Press p278-286.

Pope, H.G., & Hudson, J.I. (1986). Bulimia in men. *Medical Aspects of Male Sexuality, 20,* 33-37.

Pope, H.G., & Hudson, J.I. (1992). Is childhood sexual abuse a risk factor for bulimia nervosa? *American Journal of Psychiatry, 142,* 455-463.

Presnell, K., & Stice, E. (2003). An experimental test of the effect of weight-loss dieting on bulimic pathology: tipping the scales in a different direction. *Journal of Abnormal Psychology 112,* 166-170.

Prince, M. (1978). *The dissociation of personality* New York: Oxford University Press.

Putnam , F.W. (1989). *Diagnosis and Treatment of Multiple Personality Disorder.* New York: Guilford.

Putnam, F.W., & Trickett, P.K. (1993) Child sexual abuse: a model of chronic trauma. *Psychiatry, 56,* 82-95.

Root, M.P.P., & Fallon, P. (1989). Treating the victimised bulimic. *Journal of Interpersonal Violence, 4,* 90-100.

Ross, C.A. (1991). Epidemiology of multiple personality disorder and dissociation. *Psychiatric Clinics of North America, 14,* 503-517.

Ruderman, A.J., Grace, P.S. (1988). Bulimics and restrained eaters: a personality comparison. *Addictive Behaviors, 13,* 359-368.

Safer, D.S., Lively, T.J., Telch, C.F., & Agras, W.S. (2002). Predictors of relapse following successful dialectical behaviour therapy for binge eating disorder. *International Journal of Eating Disorders 32,* 155-163.

Safer, D.S., Telch, C.F., & Agras, W.S. (2001). Dialectical Behaviour Therapy adapted for bulimia: a case report. *International Journal of Eating Disorders 30,* 101-106.

Sanders, S. (1986). The Perceptual Alteration Scale: a scale measuring dissociation. *American Journal of Clinical Hypnosis, 29,* 95-102.

Saxe, G.N., Van der Kolk, B.A., Berkowitz, R., Chinman, G., Hall, K., Lieberg, G., & Schwartz, J. (1993). Dissociative disorders in psychiatric inpatients. *American Journal of Psychiatry, 150,* 1037-1042.

Schlundt, D.G., & Johnson, W.G. (1990). *Eating Disorders: Assessment & treatment.* Needham Heights, MA: Allyn and Bacon.

Schmidt, U., Tiller, J., & Treasure, J. (1993). Setting the scene for eating disorders: childhood care, classification and course of illness. *Psychological Medicine 23,* 663-672.

Schulman, D. (1991). A multi-tiered view of bulimia. *International Journal of Eating Disorders, 10,* 333-343.

Schwartz, R.C., Barret, M.J., & Saba, G. (1985). Family therapy in bulimia. In D.M. Garner & P.E. Garfinkel (Eds.) *Handbook of psychotherapy for anorexia nervosa and bulimia (pp* 280-307). New York: Guilford Press.

Segal, Z. (1988). Appraisal of the self-schema: construct in cognitive models of depression. *Psychological Bulletin, 103,* 147-162.

Silverman, L.H. (1983). Subliminal psychodynamic activation: overview and comprehensive listing of studies. In J.Masling (Ed.) *Empirical studies of psychoanalytic theories (Vol 1. pp 69-100).* Hillsdale, NJ: Erlbaum.

Smucker, M.R. & Niederee, J.L. (1995). Imagery rescripting: a multifaceted treatment for childhood sexual abuse survivirs. In *Innovations in Clinical Practice: a source book (Vol.13)p75-83.*

Spiegal, D., Koopman, C., Cardena, E., & Classen, C. (1996). Dissociative

symptoms in the diagnosis of acute distress disorder. In L. Michelson & W.

Ray (Eds.) *Handbook of Dissociation.* New York: Plenum.

Spielberger, C.D., Gorsuch, R.L., Lushene, R.E., Vagg, P.R., & Jacobs, G.A.

(1983). *Manual for the State-Trait Anxiety Inventory.* Palo Alto, CA

Consulting Psychologists Press.

Steiger, H., Gauvin, L., Japalpurwala, S., Seguin, J.R., & Stotland, S. (1999).

Hypersensitivity to social interactions in bulimic syndromes: relationship to

binge eating. *Journal of Consulting and Clinical Psychology, 67,* 765-775.

Steinberg, M., Cicchetti, D.V., Buchanan, J., Hall, P., & Rounsaville, B. (1993).

Clinical assessment of dissociative symptoms and disorders: the structured

clinical interview for DSM-IV dissociative disorders. *Dissociation, 6,* 3-16.

Steinberg, M., Rounsaville, B., & Cicchetti, D.V. (1990). The structured clinical

interview for DSM-III-R Dissociative disorders. Preliminary report on a new

diagnostic instrument. *American Journal of Psychiatry, 147,* 76-82.

Striegal-Moore, R.H. (1993). Etiology of binge eating: a developmental perspective.

In C.G. Fairburn, G.T. Wilson, *Binge: nature, assessment, and treatment* (pp.

144-172). New York: The Guilford Press.

Strober, M., & Bulik, C.M. (2002). Genetic epidemiology of eating disorders. In

C.G. Fairburn & K.D. Brownell (Eds.) *Eating disorders and obesity: a*

comprehensive handbook. New York: Guilford Press p238-243.

Telch, C.F., & Agras, W.S. (1996). The effects of acute caloric deprivation and

induced negative mood on binge-eating in subjects with binge-eating disorder.

Poster presented at the Eating Disorders Research Society meeting,

Pittsburgh, November.

Thaulberger, P.C., & Sydiaha, D. (1977). The relationship between an avoidance of existential-ontological confrontation: a psychometric test. *Journal of Humanistic Psychology, 17,* 89-91.

Torem, M.S. (1986). Dissociative states presenting as an eating disorder. *American Journal of Clinical Hypnosis, 29,* 137-142.

Torem, M.S. (1987). Ego-state therapy for eating disorders. *American Journal of Clinical Hypnosis, 30,* 94-103.

Torem, M.S. (1990). Covert multiple personality underlying eating disorders. *American Journal of Psychotherapy, 44,* 357-368.

Valdiserri, S., & Kihlstrom, J.F. (1995). Abnormal eating and dissociative experiences. *International Journal of Eating Disorders 17,* 373-380.

Vandereycken, W. (1994). Parental rearing behaviour and eating disorders. In C. Perris, W.A. Arrindell, & M. Eisemann (Eds.) *Parenting and psychopathology (pp 218-234)* Chichester: John Wiley.

Van den Hout, M., Tenney, N., Huygens, K., Merckelbach, H., & Kindt, M. (1995). Responding to subliminal threat cues is related to trait anxiety and emotional vulnerability: a successful replication of Macleod & Hagan (1992). *Behavioural Research and Therapy, 33,* 451-454.

Van der Hart, O., Van der Kolk, B.A., & Boon, S. (1996). The treatment of dissociative disorders. In J.D. Bremner & C.R. Marmer (Eds.) *Trauma, memory and dissociation.* Washington, DC: American Psychiatric Press.

Van der Kolk, B.A., McFarlane, A.C., & Weisaeth, L. (1996). *Traumatic Stress* New York: Guilford Press.

Vanderlinden, J. (1993). *Dissociative experiences, trauma and hypnosis: research findings and clinical applications in eating disorders.* Delft:Eburon.

Vanderlinden, J., & Vandereycken, W. (1997) *Trauma, dissociation, and impulse dyscontrol in eating disorders.* New York: Brunner/Mazel, Inc.

Vanderlinden, J., Vandereycken, W., & Probst, M. (1995). Dissociative symptoms in eating disorders: a follow-up study. *European Eating Disorders Review, 3,* 174-184.

Vanderlinden, J., Van Dyck, R., Vandereycken, W., Vertommen, H., & Verkes, R.J. (1993). The dissociation questionnaire: development and characteristics of a new self-reporting questionnaire. *Clinical Psychology & Psychotherapy, 1,* 21-27.

Vaughan, K., & Tarrier, N. (1992). The use of image habituation training with post traumatic stress disorders. *British Journal of Psychiatry 161,* 658-664.

Vitousek, K.B., & Hollon, S.D. (1990). The investigation of schematic content and processing in the eating disorders. *Cognitive Therapy and Research 14,* 191-214.

Waller, G. (1994). Bulimic women's perceptions of interaction within their families. *Psychological Reports 74,* 27-32.

Waller, G. (2002) Treatment of bulimia nervosa. *Psychiatry 1,* 12-16.

Waller, G. (under consideration) A schema-based cognitive behavioural model of the aetiology and maintenance of restrictive and bulimic pathology in the eating disorders. *Journal of Abnormal Psychology.*

Waller, G., Hamilton, K., Elliott, P., Lewendon, J., Stopa, L., Waters, A., Kennedy, F., Lee, G., Pearson, D., Kennerley, H., Hargreaves, I., Bashford. V., & Chalkley, J. (2000). Somatoform Dissociation,

psychological dissociation, and specific forms of trauma. *Journal of Trauma & Dissociation, 1,* 81-98.

Waller, G., & Kennerley, H. (2003). Cognitive behavioural treatments. In J. Treasure, U.Schmidt, & E. van Furth (Eds.) *Handbook of Eating Disorders.* John Wiley & Sons, Ltd p233-251.

Waller, G., Meyer, C., Ohanian, V., Elliott, P., Dixon, C., & Sellings (2001). The psychopathology of bulimic women who report childhood sexual abuse: mediating role of core beliefs. *Journal of Nervous & Mental Disease 189,* 700-708.

Waller, G., & Mijatovich, S. (1998). Preconscious processing of threat cues: impact on eating among women with unhealthy eating attitudes. *International Journal of Eating Disorders 24,* 83-89.

Waller, G., & Ohanian, V. (1997). *Core beliefs of women with eating disorders.* Paper presented at eating disorders 1997 conference, London, April.

Waller, G., Ohanian, V., Meyer, C., Everill, J., & Rouse, H. (2001). The utility of dimensional and categorical approaches to understanding dissociation in the eating disorders. *British Journal of Clinical Psychology, 40,* 387-397.

Waller, G., Ohanian, V., Meyer, C., & Osman, S. (2000). Cognitive content among bulimic women: the role of core beliefs. *International Journal of Eating Disorders 28,* 235-241.

Waller, G, Quinton, S., & Watson, D. (1995). Dissociation and the processing of threat related information. *Dissociation, 8,* 84-90.

Waller, G., & Ruddock, A. (1993). Experiences of disclosure of childhood sexual abuse and psychopathology. *Child Abuse Review, 2,* 185-195.

Waller, G., Waters, A. & Hill, A. (1997) *The Cognitive and Affective characteristics of bulimics: recent research and its implications for treatment.* Paper presented at the British Association of Behavioural and Cognitive Psychotherapy conference. Canterbury UK, July.

Waller, N.G., Putnam, F.W., & Carlson, E.B. (1996). Types of dissociation and dissociative types: a taxometric analysis of dissociative experiences. *Psychological Measures, 1*, 300-321.

Walsh, B.T., & Garner, D.M. (1997). Diagnostic Issues. In D.M.Garner & P.E. Garfinkel (Eds.). *Handbook of treatment for eating disorders* (pp25-33). New York: Guilford.

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality & Social Psychology, 54,* 1063-1070.

Wegner, D.M., & Vallacher, R.R. (1986). Action identification. In R.M. Sorrentino & E.T. Higgins (Eds.) *Handbook of Cognition and motivation (pp. 550-582).* New York: Guilford Press.

Wilfley, D.E. (2002). Psychological treatment of binge-eating disorder. In C.G. Fairburn & K.D. Brownell (Eds.) *Eating disorders and obesity: a comprehensive handbook.* New York: Guilford Pressp350-354.

Wiser, S. & Telch, C.F. (1999). Dialectical Behaviour Therapy for binge eating disorder. .*Journal of Clinical Psychology 55,* 755-768.

Young, J.E. (1994). *Cognitive therapy for personality disorders: a schema-focused approach* (2nd Ed) Sarasota, FL: Professional Resource Press.

Young, J.E. (1999). *Cognitive therapy for personality disorders: a schema-focused approach* (3rd Ed) Sarasota, FL: Professional Resource Press.

Young, J.E., Beck, A.T., & Weinberger. A. (1993). Depression. In D.H. Barlow

(Ed.), *Clinical Handbook of psychological disorders (2nd Ed., pp 240-277)*.

New York: Guilford Press.

Zajonc, R.B. (1968). Attitudinal effects of mere exposure. *Journal of Personality &*

Social Psychology Monograph 9(2 Part 2), 1-27.

Zigmond, A.S., & Snaith, R.P. (1983). The Hospital Anxiety and Depression Scale.

Acta Psychiatrica Scandinavica, 67, 361-370.

Appendix A

<u>Measures</u>
EDI
DES-II
CADSS
HADS

EDI - Short

Instructions

The items ask about your attitudes, feelings and behaviour. Some of the items relate to food or eating. Other items ask about your feelings about yourself.

For each item, decide if the item is true about you ALWAYS (A), USUALLY (U), OFTEN (O), SOMETIMES (S), RARELY (R), or NEVER (N). Circle the letter that corresponds to your rating. For example, if your rating for an item is OFTEN, you would circle the (O) for that item. Respond to all of the items, making sure that you circle the letter for the rating that is true about you. If you need to change an answer, make an 'X' through the incorrect letter and then circle the correct one.

1)	I eat sweets and carbohydrates without feeling nervous	A U O S R N
2)	I think that my stomach is too big	A U O S R N
4)	I eat when I am upset	A U O S R N
5)	I stuff myself with food	A U O S R N
7)	I think about dieting	A U O S R N
9)	I think that my thighs are too large	A U O S R N
11)	I feel extremely guilty after overeating	A U O S R N
12)	I think that my stomach is just the right size	A U O S R N
16)	I am terrified of gaining weight	A U O S R N
19)	I feel satisfied with the shape of my body	A U O S R N
25)	I exaggerate or magnify the importance of weight	A U O S R N
28)	I have gone on eating binges where I have felt that I could not stop	A U O S R N
31)	I like the shape of my buttocks	A U O S R N
32)	I am preoccupied with the desire to be thinner	A U O S R N
38)	I think about bingeing (overeating)	A U O S R N
45)	I think my hips are too big	A U O S R N
46)	I eat moderately in front of others and stuff myself when they're gone	A U O S R N
49)	If I gain a pound, I worry that I will keep gaining	A U O S R N
53)	I have the thought of trying to vomit in order to lose weight	A U O S R N
55)	I think that my thighs are just the right size	A U O S R N
59)	I think my buttocks are too large	A U O S R N
61)	I eat or drink in secrecy	A U O S R N
62)	I think that my hips are just the right size	A U O S R N

DES-II

RATING SCALE:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Please turn over...

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 the mirror and not recognising themselves. Circle a number to show what percentage of the time this happens to you.

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

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

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

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

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

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

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

15. Some people sometimes 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 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%

Please turn over...

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 find that in some 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 of have -just though about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it). Circle a number to show what percentage of the time this happens to you.

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

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

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

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

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

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

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

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

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

Clinician–Administered Dissociative States Scale

0=not at all
1=slightly
2=moderately
3=considerably
4=extremely

At this time in this room:

	0	1	2	3	4
Do things seem to be moving in slow motion?					
Do things seem to be unreal to you, as if you are in a dream?					
Do you have some experience that separates you from what is happening; for instance do you feel as if you are in a movie or a play, or as if you are a robot?					
Do you feel as if you are looking at things from outside of your body?					
Do you feel as if you are watching the situation as an observer or spectator?					
Do you feel disconnected from your own body?					
Does your sense of your own body feel changed: for instance does your body feel unusually large or unusually small?					
Do people seem motionless, dead or mechanical?					
Do objects look different to what you would expect?					
Do colours seem to be diminished in intensity?					
Do you see things as if you were in a tunnel, or looking through a wide angle photographic lens?					
Does this experience seem to take much longer than you would have expected?					
Do things seem to be happening very quickly as there is a lifetime in a moment?					
Do things happen that you later cannot account for?					
Do you space out, or in some other way lose track of what is going on?					
Do sounds almost disappear or become much stronger than you would have expected?					
Do things seem to be very real, as if there is a special sense of clarity?					
Does it seem as if you are looking at the world through a fog, so that people and objects appear far away or unclear?					
Do colours seem much brighter than you would have expected?					

HAD Scale

Tick only one box in each section

I feel tense or 'wound up':
Most of the time...........................
A lot of the time...........................
Time to time, occasionally..............
Not at all.....................................

I still enjoy the things I used to enjoy:

Definitely as much.......................
Not quite so much.......................
Only a little.................................
Hardly at all................................

I get a sort of frightened feeling as if something awful is about to happen:
Very definitely and quite badly.........
Yes, but not too badly....................
A little, but it doesn't worry me ....
Not at all.....................................

I can laugh and see the funny side of things:
As much as I always could ....
Not quite so much now..................
Definitely not so much now............
Not at all.....................................

Worrying thoughts go through my mind:
A great deal of the time ....
A lot of the time............................
From time to time, but not too often..
Only occasionally ....

I feel cheerful:
Not at all ....
Not often.....................................
Sometimes ....
Most of the time ....

I can sit at ease and feel relaxed:

Definitely ....
Usually ....
Not often.....................................
Not at all ....

I feel as if I am slowed down:
Nearly all the time.........................
Very often....................................
Sometimes...................................
Not at all.....................................

I get a sort of frightened feeling like 'butterflies' in the stomach:
Not at all.....................................
Occasionally................................
Quite often..................................
Very often....................................

I have lost interest in my appearance:
Definitely ....
I don't take so much care as I should
I may not take quite as much care....
I take just as much care as ever.......

I feel restless as if I have to be on the move:
Very much indeed ....
Quite a lot ....
Not very much..............................
Not at all.....................................

I look forward with enjoyment to things:
As much as ever I did ....
Rather less than I used to..............
Definitely less than I used to...........
Hardly at all.................................

I get sudden feelings of panic:
Very often indeed ....
Quite often...................................
Not very often ....
Not at all.....................................

I can enjoy a good book or radio or TV programme:
Often ....
Sometimes...................................
Not often ....
Very seldom ....

Appendix B

Information Sheets – Clinical & Control groups

Centre Number:
Study Number:

PATIENT INFORMATION SHEET

(24th September 2002; Version 2)

<u>Title of Project:</u>
The role of negative affect in triggering dissociation among bulimic women

<u>Name of Researcher:</u> Charlie Hallings-Pott

You are invited to take part in this research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully, and discuss it with friends, family and your GP if you wish. Ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part when you attend for your appointment.

Consumers for Ethics in Research (CERES) publish a leaflet called *Medical Research and You.* This leaflet gives more information about medical research, and looks at some questions that you may want to ask. A copy can be obtained from CERES, PO Box 1365, London N16 0BW.

<u>Background to the study</u>

Patterns of thinking laid down by past experience known as schemas, have been shown in research to have an important part to play in the causes, maintenance and clinical treatment of eating disorders. Examples of such schemas can be food or weight-related or connected to difficult and unpleasant early experiences. It has been shown that when schemas relating to negative feelings (such as abandonment) are activated, overeating can be triggered in women with eating disordered attitudes.
There is also a close association between eating disorders and dissociation. Dissociation is seen as an adaptive response to trauma which can anaethetise strong feelings, create psychological space and relieve stress and tension.
The present study will investigate the link between negative feelings and dissociation within a bulimic and a control population, in order to inform future clinical practice

The research will take approximately twelve months, although you will only need to take part for approximately 20 minutes.

<u>Why have I been chosen?</u>
You have recently been referred to the Outpatient Eating Disorders Service, Springfield University Hospital. All patients who are referred to this service between April 2002 and December 2002 are being asked to take part.

<u>Do I have to take part?</u>
You do not have to take part. If you do not take part, it will have no impact on the treatment that you will be offered.

<u>What will happen to me if I take part?</u>

You will be asked to complete four simple questionnaires, relating to your eating patterns, your mood, and any unusual or dissociative experiences and complete several short tasks (<5mins) on the computer. Words will be presented to you subliminally (below the level of conscious

awareness). Some of these will be 'threatening' and some will not. In between tasks you will be asked to answer questionnaires again. At the end you will be asked to do a brief word recognition task. The total time you will need is 20 minutes.

What are the possible disadvantages and risks of taking part?

There are no known risks in taking part in this form of study. The only disadvantage is that you will be asked to give up 20 minutes of your time.

What are the possible benefits of taking part?

Your treatment may be influenced by the information that you give us, since we will be more readily able to understand your problem and suggest treatment strategies.

What if new information becomes available?
Sometimes during the course of a research project, new information becomes available about the topic that is being studied. If this happens, the researcher will tell you about it and discuss with you whether you wish to continue in the study. If you decide to withdraw, the researcher will make arrangements for your care to continue. If you decide to continue in the study, then you will be asked to sign an updated consent form.

On receiving new information, the researcher might consider it to be in your best interests to withdraw you from the study. She will explain the reasons and arrange for your care to continue.

What if something goes wrong?

During research trials, there can be problems due to the methods that are used (see note about side effects, above) or due to the way in which you are treated by members of staff. It is highly unlikely that the method being used in this study will have any harmful effects. However, if you were to be harmed by taking part in this research project, there are no special compensation arrangements. If you are harmed due to someone's negligence, then you may have grounds for legal action (but you may have to pay the costs). Regardless of this, if you wish to complain about any aspect of the way that you have been approached or treated during the course of this study, the normal NHS complaints mechanisms may be available to you.

Will my taking part in the study be kept confidential?

All information collected about you during the course of the research will be kept entirely confidential. Any information about you that leaves the hospital will have your name and address removed, so that you cannot be recognized from it. However, you will be asked if it is acceptable for the researcher to notify your GP and your subsequent therapist that you are taking part in the research.

What will happen to the results of the research study?

It is anticipated that the results will be submitted for publication in a peer-reviewed journal. You will not be identified in any report or publication. If you should wish, then you will be sent a brief summary of the findings at the end of the study (July 2003) and/or a copy of the final paper when it is published (probably in 2004).

Who is organizing and funding the research?

The research is not funded by any external source, and the researcher is not being paid for including you in the study.

<u>Who has reviewed the study?</u>

This study has been reviewed and approved by the Wandsworth Local Research Ethics Committee (contact number: 0208-725 3398).

<u>Contact for further information</u>

For further information about the study, please contact: Charlie Hallings-Pott, Sub-Dept of Clinical Health Psychology, University College London, Gower Street, London, WC1E 6BT.   Tel: 020 7679 1897.

This copy of the Information Sheet is yours to keep. If you agree to take part, then you will be asked to sign a Consent Form, and you will be given a copy of that form.

Centre Number:
Study Number:

INFORMATION SHEET - CONTROL GROUP

(24th September; Version 2)

<u>Title of Project:</u>
The role of negative affect in triggering dissociation among bulimic women

<u>Name of Researcher:</u> Charlie Hallings-Pott

You are invited to take part in this research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully, and discuss it with friends, family and your GP if you wish. Ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Consumers for Ethics in Research (CERES) publish a leaflet called *Medical Research and You*. This leaflet gives more information about medical research, and looks at some questions that you may want to ask. A copy can be obtained from CERES, PO Box 1365, London N16 0BW.

<u>Background to the study</u>

Patterns of thinking laid down by past experience known as schemas, have been shown in research to have an important part to play in the causes, maintenance and clinical treatment of eating disorders. Examples of such schemas can be food or weight-related or connected to difficult and unpleasant early experiences. It has been shown that when schemas relating to negative feelings (such as abandonment) are activated, overeating can be triggered in women with eating disordered attitudes.
There is also a close association between eating disorders and dissociation. Dissociation is seen as an adaptive response to trauma which can anaethetise strong feelings, create psychological space and relieve stress and tension.
The present study will investigate the link between negative feelings and dissociation within a bulimic and a control population, in order to inform future clinical practice

The research will take approximately twelve months, although you will only need to take part for approximately 40 minutes.

<u>Why have I been chosen?</u>
You are being asked to take part as a non-eating disordered woman, to provide a control group for the group of eating-disordered women that is being collected elsewhere.

<u>Do I have to take part?</u>
You do not have to take part. If you do not take part, it will have no impact on you.

<u>What will happen to me if I take part?</u>

You will be asked to complete four simple questionnaires, relating to your eating patterns, your mood, and any unusual or dissociative experiences and complete several short tasks (<5mins) on the computer. Words will be presented to you subliminally (below the level of conscious awareness). Some of these will be 'threatening' and some will not. In between tasks you will be asked to answer questionnaires again. At the end you will be asked to do a brief word recognition task. The total time you will need is 20 minutes.

<u>What are the possible disadvantages and risks of taking part?</u>

There are no known risks in taking part in this form of study. The only disadvantage is that you will be

asked to give up 20 minutes of your time.

What are the possible benefits of taking part?

The treatment of bulimic disorders may be influenced by the information that you give us, since we will be more readily able to understand how women with those problems differ from women without an eating disorder.

What if new information becomes available?
Sometimes during the course of a research project, new information becomes available about the topic that is being studied. If this happens, the researcher will tell you about it and discuss with you whether you wish to continue in the study. If you decide to withdraw, the researcher will make arrangements for your care to continue. If you decide to continue in the study, then you will be asked to sign an updated consent form.

On receiving new information, the researcher might consider it to be in your best interests to withdraw you from the study. The reasons will be explained to you.

What if something goes wrong?

During research trials, there can be problems due to the methods that are used (see note about side effects, above) or due to the way in which you are treated. It is highly unlikely that the method being used in this study will have any harmful effects. However, if you were to be harmed by taking part in this research project, there are no special compensation arrangements. If you are harmed due to someone's negligence, then you may have grounds for legal action (but you may have to pay the costs). Regardless of this, if you wish to complain about any aspect of the way that you have been approached or treated during the course of this study, the normal NHS complaints mechanisms may be available to you.

Will my taking part in the study be kept confidential?

All information collected about you during the course of the research will be kept entirely confidential. Any information about you that leaves the hospital will have your name and address removed, so that you cannot be recognized from it.

What will happen to the results of the research study?

It is anticipated that the results will be submitted for publication in a peer-reviewed journal. You will not be identified in any report or publication. If you should wish, then you will be sent a brief summary of the findings at the end of the study (July 2003) and/or a copy of the final paper when it is published (probably in 2004).

Who is organizing and funding the research?

The research is not funded by any external source, and the researcher is not being paid for including you in the study.

Who has reviewed the study?

This study has been reviewed and approved by the Wandsworth Local Research Ethics Committee (contact number: 0208-725 3398).

Contact for further information

For further information about the study, please contact: Charlie Hallings-Pott, Sub-Dept of Clinical Health Psychology, University College London, Gower Street, London, WC1E 6BT.   Tel: 020 7679 1897.

This copy of the Information Sheet is yours to keep. If you agree to take part, then you will be asked to sign a Consent Form, and you will be given a copy of that form.

Appendix C

Consent Forms – Clinical & Control groups

Centre Number:
Study Number:
Patient Identification Number for this trial:

CONSENT FORM - PATIENT VERSION

Title of Project:
   The role of negative affect in triggering dissociation among bulimic women

Name of Researcher:
   Charlie Hallings-Pott

**Please initial
below**

1. I confirm that I have read and understand the Information Sheet
   dated 14th August 2002 (Version 1) for the above study, and have   _____
   had the opportunity to ask questions.

2. I understand that my participation is voluntary, and that I am
   free to withdraw at any time, without giving any reason and   _____
   without my medical care or legal rights being affected.

3. I understand that sections of any of my medical notes may be
   looked at by responsible individuals from South West London and
   St. George's Mental Health NHS Trust or from regulatory   _____
   authorities where it is relevant to my taking part in research.
   I give permission for these individuals to have access to my records.

4. I agree to take part in the above study.   _____

_____   _____   _____
Name of patient   Date   Signature

_____   _____   _____
Name of person taking consent   Date   Signature
(if different from researcher)

_____   _____   _____
Name of Researcher   Date   Signature

Centre Number:
Study Number:
Patient Identification Number for this trial:

CONSENT FORM - CONTROL VERSION

<u>Title of Project:</u>
The role of negative affect in triggering dissociation among bulimic women

<u>Name of Researcher:</u>
Charlie Hallings-Pott

**Please initial
below**

1. I confirm that I have read and understand the Information Sheet
   dated 14th August 2002 (Version 1) for the above study, and have
   had the opportunity to ask questions.

   _____

2. I understand that my participation is voluntary, and that I am
   free to withdraw at any time, without giving any reason and
   without my medical care or legal rights being affected.

   _____

3. I agree to take part in the above study.

   _____

Name of participant	Date	Signature

Name of person taking consent (if different from researcher)	Date	Signature

Name of Researcher	Date	Signature

Appendix D

Word Recognition Task

teardrop

painting

lovely

mammal

accident

lonely

friendship

garage

smiling

holiday

goodbye

gallery

Appendix E

Ethical Approval Letters – Wandsworth LREC

St George's Healthcare **NHS**

NHS Trust

St George's Hospital
Blackshaw Road
London
SW17 0QT

Tel: 020 8672 1255
Fax: 020 8672 5304

Direct Line: 020 8725 5398/2196 k
Direct Fax: 020 8725 1221

e-mail: ann.mash@ stgeorges.nhs.uk
kelly.llambias@ stgeorges.nhs.uk

Wandsworth Local Research Ethics Committee
1ˢᵗ Floor Grosvenor Wing

Our Ref:CH/sh/02.69.6

3ʳᵈ September 2002

Mr Charlie Hallings-Pott
Trainee Clinical Psychologist
St George's out-patient eating disorders service
Harewood House
Springfield University Hospital
London, SW17 7DJ

Dear Mr Hallings-Pott

Re: The role of negative affect in triggering dissociation among bulimic women.-02.69.6

The Local Research Ethics Committee of 28ᵗʰ August 2002 considered your application and conditional approval is given for the above named study to proceed subject to the following points being addressed:

1. The Committee would be grateful to receive further details of the way in which the controls would be identified and recruited. The Committee wondered whether consideration should be given to inviting the controls to complete a questionnaire to ensure that they did not have bulimic tendency. We believe that the Scoff questionnaire may fulfil this function.

2. The Committee felt that the Patient Information Sheet should be much more explicit about the presentation of subliminal data and the nature of this. The Committee felt that specific arrangements should be in place to help the patient's and controls who could be distressed by the presentation of this subliminal data.

3. The Committee would be grateful to receive further details of the funding arrangements for this study.

We look forward to hearing from you.

Yours sincerely

C. Heron

Dr Christine Heron
Vice-Chair/Clinical Secretary
Local Research Ethics Committee

Wandsworth Local Research Ethics Committee
1ˢᵗ Floor Grosvenor Wing

St George's Hospital
Blackshaw Road
London
SW17 0QT

Our Ref: CH/kl/02.69.6

Tel: 020 8672 1255
Fax: 020 8672 5304

25 October 2002

www.st-georges.org.uk
Direct Line: 020 8725 3398/2196
Direct Fax: 020 8725 1221

Mr Charlie Hallings-Pott
Trainee Clinical Psychologist
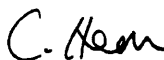75 Railton Road
Brixton
London SE24 0LF

e-mail: ann.mash@ stgeorges.nhs.uk
kelly.llambias@ stgeorges.nhs.uk

Dear M Hallings-Pott

Re: The role of negative affect in triggering dissociation among bulimic women – 02.69.6

Thank you for your letter of 3ʳᵈ October 2002 which satisfactorily addresses the points raised by the Committee. We are now happy to approve commencement of the above named study.

Yours sincerely

C. Heron

Dr Christine Heron
Vice-Chair/Clinical Secretary
Local Research Ethics Committee

Please Note: All research should be conducted in accordance with the guidelines of the Ethical Committee; the reference number allocated to the project should be used in all correspondence with the Committee and the Committee should be informed:

(a)   when the project is complete.

(b)   what stage the project is at one year from today's date.

(c)   if any alterations are made to the treatment or protocol which might have affected ethical approval being granted.

(d)   all investigators whose projects have been approved by this Committee are required to report at once any adverse experience affecting subjects in the study and at the same time state the current total number of Serious Adverse Events that have occurred.

St George's Healthcare NHS Trust Incorporating: St George's Hospital, Atkinson Morley's Hospital, Bolingbroke Hospital
Chairman: Catherine McLoughlin CBE   Chief Executive: Ian Hamilton

WHN 045 (04/00)