BINGE EATING: PSYCHOLOGICAL FACTORS, SYMPTOMS AND TREATMENT

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Short Communication A

ON THE RELATIONSHIP BETWEEN DISSOCIATION AND BINGE EATING

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ABSTRACT

Psychological dissociation is over-represented in individuals diagnosed with an eating disorder, particularly when that eating disorder includes symptoms of binge eating. This has been interpreted as evidence that dissociative processes predispose binge eating by facilitating an 'escape from awareness' of the appearance-threatening aspects of certain foods. In this chapter we review research consistent with this cognitive explanation, as well as for competing explanations that focus on the disinhibitory effects of dissociation on behaviour. We include in this review recent results from our own research suggesting that dissociation, particularly somatoform manifestations of dissociation, also contributes to binge eating by undermining an individual's body image. Limitations of the research are discussed, as is the need for greater clarity concerning the construct of dissociation. The chapter concludes with a recommendation for future research into the influence of somatic symptoms of dissociation on body image.

INTRODUCTION

Binge eating is the uncontrolled consumption of a large quantity of food over a relatively short period of time (American Psychiatric Association; APA, 2000). In bulimia nervosa, this binge eating contradicts the stated aims of the individual (to lose weight through food restriction) and typically is followed by compensatory/purgative behaviours. Clinical observations and correlational studies suggest that individuals diagnosed with an eating disorder (Chandarana & Malla, 1989; Katz & Gleaves, 1996; McCallum, Lock, Kulla, Rorty

& Wetzel, 1992; Torem, 1986; 1990; Vanderlinden, Vandereycken, van Dyck & Vertommen, 1993), particularly those with bulimic symptoms (Beato, Cano & Belmonte, 2003; Demitrack, Putnam, Brewerton, Brandt & Gold, 1990; Everill, Waller & MacDonald, 1995; Goldner, Cockhill, Bakan & Birmingham, 1991; Groth-Marnat & Michel, 2000; McManus, 1995; Waller et al., 2003), are more likely to exhibit symptoms of dissociation, such as depersonalization, derealization and absorption.

In this chapter we attempt to elucidate the psychological processes underlying binge eating, particularly in the context of bulimia nervosa, by examining the relationship between binge eating and psychological dissociation. Two explanations of this relationship are considered. In the escape from awareness explanation, binge eating is an indirect result of dissociative cognitive strategies in response to appearance-threatening food stimuli (e.g., Everill & Waller, 1995). In the somatic explanation, one that has received far less empirical attention, binge eating is an indirect result of disturbed body self-awareness.

DISSOCIATION AND ESCAPE FROM AWARENESS

Dissociative disorders are characterized by deficits of consciousness, memory, and identity (APA, 2000), and are implicated in diminished behavioural self control and disturbances of self-awareness (Brown, 2002). These symptoms are particularly prevalent in individuals who have experienced trauma such as that associated with emotional, sexual or physical abuse, exposure to combat, witnessing the death of a loved one, etc. (e.g., Kihlstrom, Tataryn & Hoyt, 1993; Putnam et al., 1986; Schachter, Wang, Tulving & Freedman, 1982). The importance of trauma to the development of dissociation has been taken to suggest that dissociation may arise as a useful psychological defense mechanism that facilitates the escape from awareness of threatening scenarios (Everill & Waller, 1995; Hallings-Pott, Waller, Watson & Scragg, 2005; van der Kolk & van der Hart, 1989).

According to traumatogenic explanations of dissociation, in certain individuals the dissociative response may generalize to and/or persist beyond the original traumatic scenario (Braun & Sachs, 1985). In these circumstances the dissociative response may be inappropriate and contribute to diminished self-awareness and self-control and undermine the development and use of responses more suited to the new scenario (Braun & Sachs).

Heatherton and Baumeister (1991) propose that some individuals attempt to deal with negative cognitions and emotions by focussing their attention to stimuli in the present and immediate (and presumably innocuous) environment. Central to this escape from awareness process is the principle that each stimulus (e.g., object, action, event, etc.) has multiple levels of meaning: lower levels of awareness emphasize the concrete aspects of the immediate stimulus environment, whereas higher levels emphasize stimulus meaning and stimulus co-relationships. Because high levels of awareness often involve consideration of societal norms and expectations, and stimulus consequences, it is thought that engagement in this level of awareness is necessary for maintaining behavioural control, including control over eating (Everill & Waller, 1995; Heatherton & Baumeister, 1991).

There is evidence to suggest that eating behaviours can also be influenced by escape from awareness processes. For example, binge eaters typically report experiencing negative affect and/or engage in negative or disturbed self evaluations immediately prior to a binge episode

(Cooper et al., 1988; Davis, Freeman & Garner, 1988; Lingswiler, Crowther & Stephen, 1989; Mitchell, Hatsukami, Eckert & Pyle, 1985; Powell & Thelen, 1996; Steiger et al., 1999; Tachi, Murakami, Murotsu & Washizuka, 2001). They are also more likely to use cognitive avoidance strategies when dealing with stressors in general (Troop, Holbrey, Trowler & Treasure, 1994).

The Disinhibition of Eating

Fuller-Tyszkiewicz and Mussap (2008a) administered a survey to determine the extent to which four factors relevant to behavioural disinhibition serve as control-specific mediators of the relationship between dissociation and binge eating. Only impulsive urgency was identified as a significant mediator. Impulsive urgency is generally associated with giving in to temptations during heightened negative emotions (Whiteside & Lynam, 2001; Whiteside et al., 2005), and its mediating role is consistent with traumatogenic explanations of dissociation in which heightened negative emotions and cognitions activate dissociative processes (Nijenhuis, Spinhoven, van Dyck, van der Hart & Vanderlinden, 1998). The irrelevance of the remaining three factors (premeditation, perseverance and sensation-seeking) is consistent with the escape from awareness model, and also with recent neurophysiological evidence that dissociation does not undermine tasks requiring planning or strategy use (Bruce, Ray, Bruce, Arnett & Carlson, 2007; Cromer, Stevens, De Prince & Pears, 2006; Giesbrecht, Merckelbach, Geraerts & Sweets, 2004).

The Processing of Threat Stimuli

Several experimental investigations have been conducted into the cognitive processes underlying these behavioural disinhibition effects. Most dramatically, presentation of threat stimuli, such as the word 'lonely', has been shown to elicit increased food consumption in individuals, particularly individuals with pre-existing symptoms of disordered eating (Meyer & Waller, 1999; Waller & Mijatovich, 1998). Other experiments have sought to measure the cognitive suppression of information that has negative or threatening associations. In a modified version of the Stroop Interference task, participants were asked to identify the colour of a printed word. Reaction times for making correct colour identifications were generally found to be longer (slower) when the words were negatively valenced, particularly when the participants exhibited symptoms of an eating disorder (Meyer, Waller & Watson, 2000; Waller, Quinton & Watson, 1995; Waller, Watkins, Shuck & McManus, 1996) or who had been diagnosed with an eating disorder (Meyer et al., 2005; Mountford, Waller, Watson & Scragg, 2004).

Of course, in order for a threatening stimulus to be suppressed it first must be processed at least to the extent that it can be recognized as a threat. For this reason, escape from awareness has been described as a two-stage process in which an initial *hypervigilance* designed to facilitate identification of threats is followed by attentional shifts away from the identified threat in order to minimize stress (Waller, Quinton, & Watson, 1995). Given this, it is unclear whether the reaction time data reported above reflect increased attention to the threat stimuli (and, hence, difficulty *disengaging* from this in order to complete the task) or

cognitive disengagement from the task (and hence evidence of the cognitive avoidance hypothesized). In this context it is interesting to note that researchers have shown a link between threat presentation and subsequent dissociative experiences in eating disordered individuals (Hallings-Pott et al., 2005), suggesting that even short-term presentation of these threat stimuli (e.g., the word 'lonely') may be sufficient to prompt a cognitive avoidance-type response, as evidenced by increased state dissociation, in particular, feelings of derealization.

Food as a Threat to Appearance

Despite the centrality of food and appearance concerns in individuals diagnosed with an eating disorder (APA, 2000), extant research suggests that food and appearance-threatening stimuli do not necessarily elicit cognitive-avoidance responses. For example, Waller and colleagues report that subliminal presentation of a food cue (the word 'hungry') does not reliably undermine completion of a subsequent word search task (Mountford et al., 2004), nor does it increase subsequent food consumption relative to a neutral cue condition (Meyer & Waller, 1999). Furthermore, participants are neither slower nor faster at solving anagrams when the words considered are food items (e.g., 'beef', 'lamb', 'rice', etc.) rather than non-food items (Meyer et al., 2005).

However, Fuller-Tyszkiewicz and Mussap (submitted 2008b) have criticized these studies for using food words that are not necessarily threatening (many may, in fact, be viewed as positive words by individuals who are not concerned with their appearance) and that the words are at best only symbolic representations of threats rather than actual threats. On these bases Fuller-Tyszkiewicz and Mussap measured reaction times for processing of food and appearance words (both positive and negative) immediately prior to and following actual presentation of a tray containing tempting but appearance-threatening food items (pastries). The relationships between dissociation and reaction times for processing the food- and appearance-related words were in large part as predicted by the escape from awareness model: As expected, level of dissociation correlated positively with reaction times for processing appearance threats (e.g., 'fat', 'ugly', etc.). Furthermore, dissociation was unrelated to reaction times for processing positive aspects of food (e.g., 'delicious', 'sweet', etc.) and for processing information related to compensatory behaviours following over-eating (e.g., 'purge', 'exercise', etc.). This is consistent with the notion that dissociative processes operate in response to threatening rather than positive stimuli. However, in contradiction of the escape from awareness model, the effects associated with appearance threats were not magnified in individuals with self-reported concerns with appearance or with food.

Collectively, the results of the abovementioned studies are consistent with the proposition that individuals with body image concerns, symptoms of disordered eating, and/or a diagnosed eating disorder, process threat stimuli differently from non-eating-disordered individuals. Surprisingly, the threats in question are not necessarily related to food or appearance but can include negative information of a general nature.

DISSOCIATION AND DISTURBED BODY IMAGE

Research into dissociation in the context of binge eating typically has focussed on cognitive and behavioural factors of the type described in the previous sections. However, dissociation is understood to include non-cognitive symptoms (Brown, 2002; Cardeña, 1994; Holmes et al., 2005). In the following section on the somatic effects of dissociation, the influence of dissociation on binge eating will be considered in terms of its effects on perceptual body image.

Perceptual Body Image and Disordered Eating

Waller and colleagues (2003) observed that somatoform dissociation, that is, bodily symptoms of dissociation, predict variance in disordered eating symptomatology additional to that predicted by generalized, psychoform symptoms (Waller et al., 2003). This observation has been replicated by Fuller-Tyszkiewicz and Mussap (2008a), who also noted that the effect is most pronounced for binge eating symptoms of disordered eating.

Somatic symptoms of dissociation include disruptions to bodily functions and disturbances of body perception, such as altered, inaccurate, or poorly-integrated body self-identity. Interestingly, disturbances of body perception are also thought to be relevant to eating disorders (e.g., Bruch, 1962). In addition to over-valuing their appearance (Kjaerbye-Thygesen, Munk, Ottesen & Kjaer, 2004), individuals diagnosed with an eating disorder are also more likely to over-estimate their physical body size (Fitzgibbon et al., 2003; Polivy & Herman, 2002; Stice, Killen, Hayward & Taylor, 1998), report fluctuations in their self-estimated body size over time (Brinded, Bushnell, McKenzie & Wells, 1990; Rudiger, Cash, Roehrig & Thompson, 2007), and possess a body image that is more malleable in terms of its size (Mussap & Salton, 2006), particularly following exposure to images of thin-idealized bodies (Irving, 1990) and during scrutiny of their appearance by others (Cash & Fleming, 2002).

Typically, these body image disturbances have been interpreted as evidence of cognitive-affective disturbances (Gardner & Bokenkamp, 1996). However, there is also evidence that disturbed perceptions may also be responsible. For example, there is neurophysiological evidence that individuals diagnosed with an eating disorder exhibit abnormal functioning in right parietal regions of the cerebral cortex that are thought to integrate perceptual information relevant to body image (Grunwald, Ettrich, Busse, Assmann, Dähne, & Gertz, 2002; Råstam, Bjure, Vestergren, Uvebrant, Gillberg, Wentz, & Gillberg, 2001; Smeets & Kosslyn, 2001). Psychological evidence has also revealed associations between eating disorder symptomatology and malleability of perceptual body image. Using what is referred to as the 'rubber hand illusion', Mussap and Salton (2006) observed that individuals with symptoms of disordered eating are more likely to subjectively incorporate a prosthetic hand into their body image. Interestingly, and consistent with the involvement of right-brain regions such as the postcentral gyrus and neighbouring areas within the contralateral right parietal cortex (Lloyd, Shore, Spence & Calvert, 2002), the relationship between the rubber-hand illusion and disordered eating symptomatology was only obtained when the left hand was tested.

Dissociation and Body Image Disturbance

On the basis of the rubber-hand illusion results, Mussap and Salton (2006) proposed that the body image disturbances reported by individuals diagnosed with an eating disorder reflect an underlying instability of perceptual body image. Furthermore, because dissociation has been found to correlate positively with body-evaluative aspects of disordered eating, such as body dissatisfaction, internalization of the thin ideal and the tendency to compare one's body with that of others (Beato, Cano & Belmonte, 2003; Fuller-Tyszkiewicz & Mussap, 2008a), Mussap and Salton proposed that dissociation may undermine normal integration of appearance-relevant information and, in turn, contribute to body image vulnerability to the thin ideal.

Fuller-Tyszkiewicz and Mussap (submitted 2008c) tested this idea by experimentally evaluating the body image of a convenience sample of 93 female university students, and tested various dimensions of body image disturbance as possible mediators of the relationship between somatoform dissociation and binge eating. In this study, body image was measured by presenting participants with photographs of their own bodies digitally altered to produce progressively thinner and wider versions. The photographs were presented randomly according to the psychophysical method of constant stimuli and participants were asked to determine whether each image presented to them was thinner or wider than their actual body size. This method yielded three independent measures of body image disturbance: systematic errors in body size judgments (body image distortion), reduced sensitivity to body size differences (body image uncertainty), and variability in body size judgments over time (body image instability).

Although somatic symptoms of dissociation were unrelated to body image distortion or uncertainty, a significant positive relationship was observed between dissociation and body image instability. Binge eating yielded a similar pattern of results, being significantly related to body image instability but unrelated to body image distortion or uncertainty. Most importantly, path analyses revealed that the relationship between somatic symptoms of dissociation and binge eating was significantly mediated by body image instability.

Fuller-Tyszkiewicz and Mussap (submitted 2008c) speculated that body image instability serves to make individuals vulnerable to external standards of appearance (i.e., the thin ideal) and, in turn, makes them susceptible to disordered eating, including binge eating. They tested this idea by exposing their participants to a series of images of thin female models sourced from the internet, and measuring the extent to which their body image estimates were altered following this exposure. However, body image malleability, measured in this way, was found to be unrelated either to binge eating or somatic symptoms of dissociation.

CONCLUSION

This review of the literature critically examined the limited research that exists on the nature of the relationship between dissociation and binge eating. In reviewing this literature it became apparent that perhaps the greatest obstacle in clarifying this relationship is the construct of dissociation itself. More precisely, as a subjectively-defined, multi-dimensional construct (Brown, 2002; Holmes et al., 2005), dissociation may influence an individual's

relationship with food through its effects on cognitions and emotions associated with particular types of food, diminished behavioural self-control in the context of food and eating, and even disturbances of body self-perception. Consistent with this view, the extant literature suggests that the relationship between dissociation and binge eating may reflect underlying disturbances in the processing of threat information and/or the processing of body-image information. Specifically, evidence was reviewed indicating (i) that dissociation is related to cognitive suppression of threat stimuli, including appearance threats, (ii) that dissociation is related to body image instability, and (iii) that both cognitive suppression of appearance threats and body image instability are in turn related to binge eating.

Although these are promising results, they represent only a limited form of evidence, partly because it remains unclear (and untested) exactly how suppression of appearance threats and unstable body image contribute to binge eating, and partly because most of the relevant research has been conducted with convenience samples which did not include individuals diagnosed with either dissociation or disordered eating. Furthermore, it is important to note that the body image results reviewed were sourced from a very limited number of studies (certainly in comparison to the number of studies that have explored cognitive factors). The lack of body perception research in the area is particularly surprising given the prevalence and salience of somatic symptoms in dissociation, and the obvious relevance of body image in disordered eating. We suggest that these results warrant further empirical attention, particularly into the somatic bases of the relationship between dissociation and binge eating.

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