

HYPNOTIC SUSCEPTIBILITY, OR F-BIAS: ITS RELEVANCE TO EATING DISORDERS

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Abstract

Hypnosis research and theory has recently paid increasing attention to hypnotizability as a trait in its own right and to a convergence with ideas in neuropsychology. Hypnotizability, or F-bias, may be broadly characterized as involving focused attention, flexibility in switching cognitive styles and the activity of frontal cortical systems. F-bias/hypnotizability correlates with a number of activities other than hypnotic performance, one of which is disordered eating behaviour. Within the clinical literature the general finding has been that restricting anorexics are of normal or slightly above normal hypnotizability whereas bulimics are very significantly above normal hypnotizability and show increased dissociative tendencies. In normal weight non-clinical populations also there is also a positive correlation between hypnotizability, dissociative tendencies and attitudes to food intake. A recent study looked at both dissociation and hypnotizability in relation to disordered eating, as measured by an eating questionnaire, in a normal weight female undergraduate population. The data confirmed that those with bulimic tendencies scored higher on both hypnotizability and dissociation. The results also showed that hypnotizability was specifically related to a factor of dietary restraint, whereas dissociation was related to a factor of impulsive eating. The latter may account for the binge components of disordered eating. In contrast to earlier views, which tended to equate hypnotizability and dissociative tendencies, these data suggest that they are independent factors which influence different aspects of eating behaviour. Other work is described, which indicates that restrained eaters are more responsive than non-restrained eaters to suggestions of increased body size, which may account in part at least for the distortions of body image seen in clinical eating disorders. The ways in which both hypnotizability and dissociative tendencies might operate as independent moderators in a sociocultural model of the development of anorexia and bulimia nervosa are discussed.

Key words: dissociation, eating disorders, dietary restraint, body image

One of the most interesting developments in hypnosis research and theory over the past few years has been an increasing focus on the phenomenon of hypnotizability as a trait in its own right and not merely as a pre-requisite for entering into hypnotic experiences. This perspective derives in significant part from the work of Gruzelier and Crawford and their colleagues (Crawford, 1994; Crawford and Gruzelier, 1992). Hypnotizability in this view may be seen as a reflection of a particular cognitive style or capacity that features an ability to focus and sustain attention and to disattend to extraneous stimuli (which are essential for the planning, execution and evaluation of action). In addition it may involve an ability to switch flexibly between an external focus of attention to an internal focus and from analytic to more holistic processing

styles. The latter perhaps being a core feature of the hypnotic experience itself (Brown and Oakley, 1997).

Equally interesting, and deriving largely from the same source, has been the perception that this represents a convergence with ideas in neuropsychology – in particular with the characteristics of frontal cortical attentional systems and especially with the activities of the Supervisory Attentional System (see Shallice, 1988). There are clear similarities, for example, in the hypnosis literature, on the one hand, between Hilgard's (1992) Central Control Structure (or Executive Ego) and its relationship with subordinate semi-autonomous cognitive structures and, on the other hand, in the neuropsychological literature between the Supervisory Attentional System and lower level schemata.

If this convergence reflects a true underlying identity, some aspects at least of what hypnosis researchers have been measuring via tests of hypnotic susceptibility correspond to what others in neuropsychology have been measuring, particularly as monitors of the integrity of frontal cortical attentional systems, using the Wisconsin Card Sorting Test, the Trails Test and Tower of Hanoi (or Tower of London: Shallice, 1982). We should be able to predict on this basis that individuals with frontal cortical damage would be low hypnotizables (there is, as far as we are aware, no evidence on this but it seems intuitively very likely), that hypnotizability should increase as frontal cortical systems mature (which it does, to peak at age 9–12 yrs, and then declines), and that performance on tests like the Trails Test, Tower of London and Wisconsin Card Sorting should correlate with scores on tests of hypnotic susceptibility. We are not aware that any of these have yet been tested, although there is evidence that other measures of attentional processes, such as those which underlie Necker Cube reversals, which are impaired in frontal cortical pathology, are positively correlated with hypnotic susceptibility (Crawford et al., 1993).

This broader perspective rescues the phenomenon of hypnotizability from the rather parochial (and circular) position of being that measured (innate or acquired) capacity which correlates with those performances and experiences that commonly accompany hypnotic procedures. Hypnotizability tests become just one of possibly many ways of measuring an important aspect of human information processing, reflecting in particular the selectivity and flexibility with which attentional resources can be distributed. It is tempting to reflect this broader perspective and to relabel these core attributes as perhaps 'F-bias'. Where F is for:

- focused attention (and disattention to extraneous stimuli),
- flexibility in switching cognitive styles appropriately, and
- frontal cortical systems, which underlie these cognitive capacities.

We might expect so fundamental a difference in cognitive style to affect many other areas of human activity than simply the capacity for formal hypnotic experience (important and interesting though that is). We do know in fact that F-bias/hypnotizability does correlate with a number of activities other than hypnotic performance and experience. There are correlations with creativity for instance (Shames and Bowers, 1992), with the 'method' style of acting (Hilgard, 1979), with high levels of ability in individual-skill sports (Hilgard, 1979), with multiple personality disorder, hysteria, and PTSD (Bliss, 1986; Groth-Marnat, 1991), with phobias (Crawford and Barabasz, 1993) and eating disorders (of which more below). Interestingly both of the last two relationships are found in non-clinical as well as clinical populations and more commonly in females than in males.

It is also important to recall that several studies have shown that standard measures of hypnotizability (such as the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A), Shor and Orne, 1962; and the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C), Weitzenhoffer and Hilgard, 1962) produce low, but significant positive correlations with measures of dissociative ability (such as the Dissociative Experiences Scale (DES), Bernstein and Putnam 1993) when both are administered to normal populations in a hypnotic context, though this has not been a universal finding (see Butler and Bryant, 1997, for a brief review). A small positive correlation has also been found in eating disorder patients between scores on the Dissociation Questionnaire (DIS-Q, Vanderlinden et al., 1993) and the Stanford Hypnotic Clinical Scale (SHCS, Morgan and Hilgard, 1975) by Vanderlinden, Spinhoven, Vandereycken, and Van Dyk (1995). More consistent has been the failure to find a similar correlation when hypnotizability and dissociative ability are measured in independent contexts in normal populations, although one recent study (Butler and Bryant, 1997) reported a significant positive correlation between the DES and HGSHS:A when these were administered independently. Thus whilst it seems clear that the relationship between measures of dissociation and hypnotizability may be influenced by context, as is the relationship between hypnotizability and other factors such as absorption (Oakman et al., 1996), there is enough evidence of their relatedness in some situations to suggest that investigating hypnotizability (or F-bias) independently of other factors, such as dissociation, is unlikely to provide the whole of the story.

With eating disorders in clinical populations the general finding has been that restricting anorexics are of normal or slightly above normal hypnotizability (as measured by the HGSHS:A, SHSS:C, SHCS and the Hypnotic Induction Profile (HIP) (Spiegel and Spiegel, 1978)), bulimics are more markedly above normal hypnotizability and anorexics who binge and purge are somewhere between the two (Barabasz, 1991; Covino et al., 1994; Griffiths, 1993; Pettinati et al., 1985; Torem, 1986; Vanderlinden et al., 1995). In this context of a potential link between hypnotizability and eating disorders in clinical populations it is also worth noting that families who demand excessive conformity have been associated with the development of both anorexia nervosa and bulimia (Bruch, 1977, Minuchin et al., 1978) as well as with heightened hypnotizability in the children of those families (Long, 1968; Shames, 1981).

There is a general consensus that eating disorders of the bulimic type are associated with dissociative tendencies (Covino et al., 1994; Dalle Grave et al., 1996; Everill and Waller, 1995; Vanderlinden et al., 1993). Dissociation is not usually assumed to be a feature of anorexia of the restricting type however, and in line with this view Vanderlinden et al. (1995) found a trend towards higher scores on the Dissociation Questionnaire (DIS-Q, Vanderlinden et al., 1993) in both bulimic and mixed-type anorexics compared with anorexics of the restricting type. This difference was significant when the scores for the 'loss of control' subscale of the DIS-Q were analysed separately. It is also frequently argued that elevated dissociative tendencies are a product of childhood trauma and a number of studies have demonstrated that in clinical eating disorder populations the highest incidence of childhood trauma is found in patients with bulimic symptoms (Dalle Grave et al., 1996; Vanderlinden et al., 1993; Waller, 1991).

In normal weight non-clinical populations (female college students) Groth-Marnat and Schumaker (1990) found a positive correlation between hypnotizability (HGSHS:A), attitudes to food intake (Eating Attitudes Test, Garner et al., 1982) and

fear of becoming overweight (Goldfarb Fear of Fat Scale, Goldfarb et al., 1985). Similarly, Wybraniec and Oakley (1996) and Frاسquilho, Oakley and Ross-Anderson (1998) have reported a positive correlation between hypnotizability as measured by the Creative Imagination Scale (CIS, Barber and Wilson, 1978) and the cognitive restraint factor of the Three Factor Eating Questionnaire (TFEQ, Stunkard and Messick, 1985). Also in normal weight female college students, Rosen and Petty (1994) found a positive relationship between eating disorders (Eating Disorders Inventory, Garner et al., 1983 and the Bulimia Test – BULIT, Smith and Thelen, 1984) and dissociated feelings/loss of control (DES and the Perceptual Alteration Scale – PAS, Sanders, 1986).

A recent study by Frاسquilho and Oakley (1997) explored further the relationship between dissociation (DES) and hypnotizability (CIS) in relation to eating behaviour (TFEQ) in a normal-weight female undergraduate population. They confirmed the earlier observation of a significant positive correlation between hypnotizability and ‘cognitive restraint’ (factor 1 of the TFEQ; $r = 0.66, p < 0.001$) and also found significant positive correlations between dissociation scores and ‘disinhibition of control’ (TFEQ factor 2) and ‘susceptibility to hunger’ (TFEQ factor 3) ($r = 0.55, p < 0.001$ and $r = 0.49, p < 0.01$ respectively). As in previous studies using the TFEQ (e.g. Stunkard and Messick, 1985; Williams et al., 1996) no significant correlation was found between the cognitive restraint factor and either of the other two factors, whereas there was a significant correlation between disinhibition of control and susceptibility to hunger ($r = 0.54, p < 0.001$). A good case has been made on the basis of the latter correlation and second-order factor analysis of the subscales of the TFEQ for considering disinhibition of control and susceptibility to hunger as measuring a single higher-order factor of ‘impulsive eating’ (Collins et al., 1992). When the disinhibition of control and susceptibility to hunger scores of the Frاسquilho and Oakley (1997) study are combined in this way as an impulsive eating score there is again no correlation with hypnotizability scores but there is a strong correlation between impulsive eating and dissociation scores ($r = 0.6, p < 0.001$). There was also a positive correlation between the hypnotizability and dissociation measures ($r = 0.59, p < 0.001$) which, although higher than shown in previous studies, is consistent with earlier positive reports in that both measures were administered in the same quasi-hypnotic context, even though the CIS was delivered without a prior hypnotic induction. These results as a whole suggest that although hypnotizability and dissociation may be related in non-clinical populations, they appear to affect different aspects of eating behaviour. In particular it appears that processes underlying dietary restraint may be better understood in the context of hypnotizability, whereas the processes underlying disinhibited eating (binge eating) may be better considered in a dissociative framework.

Although not reported in the Frاسquilho and Oakley (1997) paper, the same study included an additional question set within the TFEQ framework that asked subjects to rate the frequency with which they indulged in uncontrolled binge behaviours (‘Do you go on eating binges where you feel like you can’t stop?’) on a scale of 0 (never) to 3 (at least once per week). When this score is used to form a ‘bulimic tendency’ group ($N = 13$; scoring 1 or more on the additional question) and a control group ($N = 24$; scoring 0) the bulimic tendency group’s score is significantly higher than that of the controls on hypnotizability (CIS: 31.92, sd 3.57 and 19.71, sd 10.42 respectively: $t = 5.21, p < 0.001$ 2-tailed test), dissociative tendencies (DES: 35.85, sd 15.12 and 19.2, sd 15.43, $t = 3.15, p = 0.003$), cognitive restraint (TFEQ factor 1: 15.92, sd 5.87 and 7.00, sd 7.14, $t = 3.85, p < 0.001$) and impulsive eating (TFEQ factors 2 and 3: 17.15,

sd 6.16 and 12.00, sd 4.49, $t = 2.92$, $p = 0.006$). It would appear from this that bulimic tendencies (binge behaviours), at least where they are self-reported in a non-clinical population, involve both dietary restraint and impulsive eating and are associated with high hypnotizability and dissociation scores. It is interesting, however, that within the bulimic tendency group there remains no significant correlation between cognitive restraint and impulsive eating and there is no longer a correlation between hypnotizability (CIS) and dissociative tendencies (DES), indicating once more their relative independence as factors even in a group in which they are strongly associated. It is also interesting that in the bulimic tendency group there is a strong negative correlation between dissociative tendencies (DES) and cognitive restraint of eating (TFEQ factor 1) ($r = -0.69$, $p = 0.008$), which may indicate that, in individuals showing high levels of cognitive restraint, dieting behaviour may be interfered with when dissociative tendencies are also high.

There is then a very strong suggestion from the studies reviewed so far that hypnotizability is specifically related to the tendency, or motivation, to consciously restrict food intake. There is also a suggestion that dissociative ability may account for some aspects of disordered eating – notably the binge components of eating disorders of the bulimic type, which are often associated with feelings of depersonalization, derealization and loss of control (Everill and Waller, 1995). It is also implied by this that although they frequently co-exist (in bulimics for instance) dissociative ability and hypnotizability act as independent factors in determining the nature of an eating disorder. Also of relevance here is the relationship between the three factors in the TFEQ. A central proposal of restrained eating theory (Herman, 1978) is that restraint produces disinhibition and this would lead to the expectation of a positive relationship between the TFEQ factors of cognitive restraint and disinhibition. As noted above, however, this predicted correlation is seldom found. Williams, Michela, Contento, Gladis and Pierce (1996) used the TFEQ in a large normal adolescent sample and found, in common with our own slightly older sample, that overall there was no significant correlation between cognitive restraint and disinhibition. However, when using body weight as a moderator variable, Williams et al. found that for those who are thinner the predicted positive relationship between cognitive restraint and disinhibition is present, whereas for heavier individuals the relationship between the two factors is negative. Equally, Williams et al. found that within the group who could be defined as dieters (i.e. those high on the cognitive restraint factor) there were two subgroups: those who also showed disinhibition (disinhibited dieters) and those who did not show disinhibition (stringent dieters). It was also evident that within the population they studied there were disinhibited individuals who binged but did not show evidence of cognitive restraint of eating (bingers). This study thus supports the view that the factors of dietary restraint and disinhibited eating can vary independently as is being suggested here for the factors of hypnotizability and dissociation. It also seems reasonable to suggest a continuum between dieting and eating disorders (e.g. Hsu, 1990). Extrapolating the Williams et al. data into clinical populations it would be possible to equate bulimics and mixed pattern anorexics with disinhibited dieters, whereas anorexics would correspond to an extreme form of stringent dieter, who perhaps go on to develop a monoideistic disorder as described by Kaffman (1991).

Before considering further how hypnotizability and dissociative ability may be involved in the aetiology and expression of eating disorders, let us look at one other aspect of eating disorder, which is common to both bulimia and anorexia – body image distortion (Smeets, 1997; Williamson et al., 1993). Changes in sensory and perceptual experience, including distortions of body image, are also commonly experienced

by hypnotizable subjects in response to suggestions. It has already been demonstrated that restrained eaters appear to be highly hypnotizable and it might be predicted on this basis that they would more readily undergo distortion of body-image, which may serve as another spur to their weight-regulation activity. This possibility was investigated in a preliminary investigation in a non-clinical, normal weight population by Wybraniec and Oakley (1996), who added two body size items (suggested body size increase and body size decrease) to a modified version of the CIS. As already noted they found the expected positive correlation between hypnotizability and cognitive restraint using the regular CIS items, but they also found a greater tendency for the restrained eaters to experience a suggested body image distortion, particularly in the direction of increased body size. These findings have since been replicated in a more extensive study by Frasilho, Oakley and Ross-Anderson (1998) using similar procedures, again in a non-clinical, female student population. The 40 participants were divided into restrained and non-restrained eaters using a median-split based on TFEQ restrained eating subscale scores. Taking the overall (10-item) CIS scores as a measure of hypnotizability (or waking suggestibility) the restrained eaters produced significantly higher scores (mean CIS score, out of a maximum of 40, for restrained eaters = 26.4, sd 5.7 and for non-restrained eaters = 22.3, sd 7.44, $t = -1.95$, $p < 0.05$, one tailed). The mean score (out of a maximum of four) for the restraint group on the suggested body size increase item was significantly higher than on the body size decrease item (mean score on increase item 2.95, sd 1.23; decrease 1.90, sd 1.12, $t = 3.05$, $p = 0.008$, 2-tailed). However, the scores on the two suggested body size change items were not significantly different in the non-restrained group (increase 1.75, sd 1.25; decrease 1.55, sd 1.32). In addition the restrained group's score on the increase item was significantly greater than that of the non-restrained group ($t = 3.05$, $p = 0.004$), although there was no between-groups difference on the decrease item. The non-restrained group thus appears to have responded equally, albeit moderately, to both the increase and the decrease suggestion. The restrained eating group, on the other hand, appears to have responded similarly to the non-restrained group on the decrease item but very much more strongly to the suggested body size increase item. Selectively greater malleability of body image in the direction of body size increase as a result of suggestion in the restrained eaters is of course consistent with the direction of body image distortion seen in bulimics and anorexics and also with the hypothesis that this distortion is a product of their increased hypnotizability/suggestibility. In addition to between-groups comparisons the data for all 40 participants were entered into a correlational analysis (yielding Pearson's r coefficients, all controlling for body weight and height via the Body Mass Index, Williamson, 1990). There was the expected overall positive correlation between hypnotizability (CIS) and cognitive restraint (TFEQ factor 1), although this was smaller than in the previous studies ($r = 0.36$, $p < 0.05$), and again no correlation between hypnotizability and impulsive eating (TFEQ, factors 2 and 3). There were significant positive correlations between responses to the body image increase item and cognitive restraint ($r = 0.53$, $p < 0.001$), impulsive eating ($r = 0.42$, $p < 0.01$) and a trait measure of anxiety about body fat ($r = 0.57$, $p < 0.001$) drawn from the Physical Appearance State/Trait Anxiety Scale (Reed et al., 1991). These correlations suggest perhaps that the propensity to experience a distorted, enlarged body image is not only related to hypnotizability and dietary restraint but also to dissociative tendencies, insofar as these are reflected in impulsive eating, and anxiety over body fat. There were no correlations between responses to body size decrease suggestions and any of the other measures. There were, however, significant positive correlations between the

standard CIS (10 item) scores and scores on the body image increase item ($r = 0.57$, $p < 0.001$) and the body image decrease item ($r = 0.54$, $p < 0.001$) as well as between the two body image change items themselves ($r = 0.48$, $p = 0.002$). This seems to suggest that the responses of subjects to these two additional items are closely related to their hypnotizability as a more general trait, though it could simply be a consequence of similar item construction and procedures.

One possibility for reconciling the data from measures of hypnotizability and dissociation on the one hand and the three factors of the TFEQ on the other is to suggest that the hypnotizability scales are measuring attributes in common with the cognitive restraint subscale of the TFEQ and that the DES is measuring among other things the same attribute as the disinhibition subscale and to some extent also the hunger subscale of the TFEQ, which together form a measure of impulsive eating. Concerning the second of these equivalences, it is worth bearing in mind that 'dissociation' is not only not well-defined but is unlikely to prove to be a unitary concept. We may need to think in terms of a distinction, for instance, between 'controlled' dissociative processes such as occur in the course of everyday (adaptive) cognitive activities and which may explain some of the relationship between hypnotizability and measures of dissociative abilities and, 'uncontrolled' or automatic dissociations, possibly trauma-related in many cases, which are of more relevance to binge behaviours and the experiences of those who suffer dissociative identity disorder. These may prove to be two poles of a continuum or may be qualitatively distinct entities. For the time being, however, it is proposed to accept a broad DES/impulsive eating equivalence (this will be referred to below as 'dissociation'). It may be instructive, however, to look a little more closely at the implications of the relationship between hypnotizability (F-bias), cognitive restraint and eating disorders generally. One aspect of F-bias is the suggested relationship with frontal cortical systems, focused attention and the efficient action of some neuropsychological system akin to the Supervisory Attentional System. This would be expected to lead to an increased ability to plan ahead, to evaluate consequences of actions and to apply these abilities in the service of goals, such as adopting and maintaining a strict dietary regime. F-bias in other words should enable the individual to exercise goal-directed control and to maintain that goal-directedness over time, they should be very effective dieters (this will be referred to below as 'control'). However, F-bias, or hypnotizability, is also associated with other characteristics, which may be relevant to the aetiology and maintenance of eating disorders. First, there is 'suggestibility', which may be considered a highly evolved social adaptation in the service of group cohesiveness (Schumaker, 1991), in which case its association with newly evolved frontal systems would make sense. In particular, there is the sort of suggestibility measured by hypnotizability scales that correlates, under some circumstances at least, with so-called 'waking suggestibility', which the CIS may be considered to measure and which may include a responsiveness to, or compliance with, the suggestions of society generally (Gwynn and Spanos, 1996; Wagstaff, 1996). Hypnotizability also implies a greater responsiveness to more specific suggestions, which can affect somatosensory experiences, including perceived body size changes, such as the subjective changes that are experienced in age regressions and those that were described for restrained eaters in the Wybraniec and Oakley (1996) and Frاسquilho, Oakley and Ross-Anderson (1998) studies reported above (this factor will be referred to below as 'body image'). The following is an attempt to integrate the factors of 'dissociation', 'control', 'suggestibility' and 'body image' into a model of the development of eating disorder, which is based closely on the one proposed by Stice (1994) for bulimia.

Stice's (1994) sociocultural model of the development of bulimia nervosa identifies both mediating factors and moderating factors (see Figure 1). The model has as its starting point societal pressures concerning appearance leading via influences from family, peers and the media to internalization of beliefs such as the 'thin ideal'. This reflects the normal process by which individuals incorporate cultural norms. In some cases, however, especially if the individual experiences low self-esteem and identity confusion, this may result in what has been referred to as 'hyperinternalization of the thin-ideal', which is proposed as an essential step in the sociocultural model of bulimia. (Stice, 1994; Striegel-Moore et al., 1986). Hypnotizability might be relevant here as a moderator, by virtue of the highly hypnotizable individual's enhanced susceptibility to the influence of waking suggestion and hence an increased tendency to internalize the messages of society urging a slim body shape (Groth-Marnat, 1991). This is the moderating factor labelled 'suggestibility' in Figure 1. Internalization of the thin ideal leads to body dissatisfaction, especially if the person is objectively overweight. This process might be further enhanced by hypnotizability through body image distortion ('body image' in Figure 1), particularly if this distortion is biased towards an overestimation of body size (Wybraniec and Oakley, 1996; Frاسquilho et al., 1998). It is relevant to note here that when actual body size is controlled for, both bulimics and anorexics show equivalent body image disturbances in the direction of overestimation of current body size (Williamson et al., 1993). Restrained eating emerges as a strategy to meet the societal ideal and to reduce negative affect. As already discussed the effectiveness with which a regime of dietary restraint is conducted should be greater in highly hypnotizable individuals by virtue of their efficient frontal cortical attentional systems ('control' in Figure 1).

Stice's account was concerned only with bulimia and he proposed that individuals follow this route if appropriate family and societal models are available, their coping skills are poor and if they show impulsivity as a trait. In the case of impulsivity, Stice could find little direct evidence to support his proposal that it is a prominent trait in bulimics, although he cites a number of studies which show that bulimics are more likely than normals to indulge in impulsive behaviours such as stealing, substance abuse and self-injury. It is clear, however, that some of this lack of control might be attributed to dissociative tendencies and the idea explored earlier that dissociation might be a specific moderator on the route to bulimia via impulsive eating fits easily into the model at this point ('dissociation' in Figure 1). In view of the putative link between trauma and dissociation, implicating dissociation as a moderator for the development of bulimia is also consistent with the higher incidence of childhood trauma, which has been observed in individuals who later display eating disorders of the bulimic type compared with other eating disorders (Dalle Grave et al., 1996).

The route leading to anorexia in Figure 1 was not incorporated in Stice's original account. However, it seems plausible to suggest that anorexics share the route into restrained eating with the potential bulimics but to also suggest that in the absence of dissociative tendencies they then follow a more direct route into increasingly self-obsessed dietary restraint, especially if they are presented with appropriate models for their behaviour and if their alternative coping skills are poor. This view of course implies that anorexics are as highly hypnotizable in the pre-clinical phase as the prospective bulimics (and in line with what was said above their heightened hypnotizability may derive from an upbringing which stressed conformity and inhibited individuation). There is very little direct evidence to support high pre-clinical levels of hypnotizability in anorexics, although the observation that restrained eaters in normal populations are high hypnotizables is consistent with this if it is accepted that

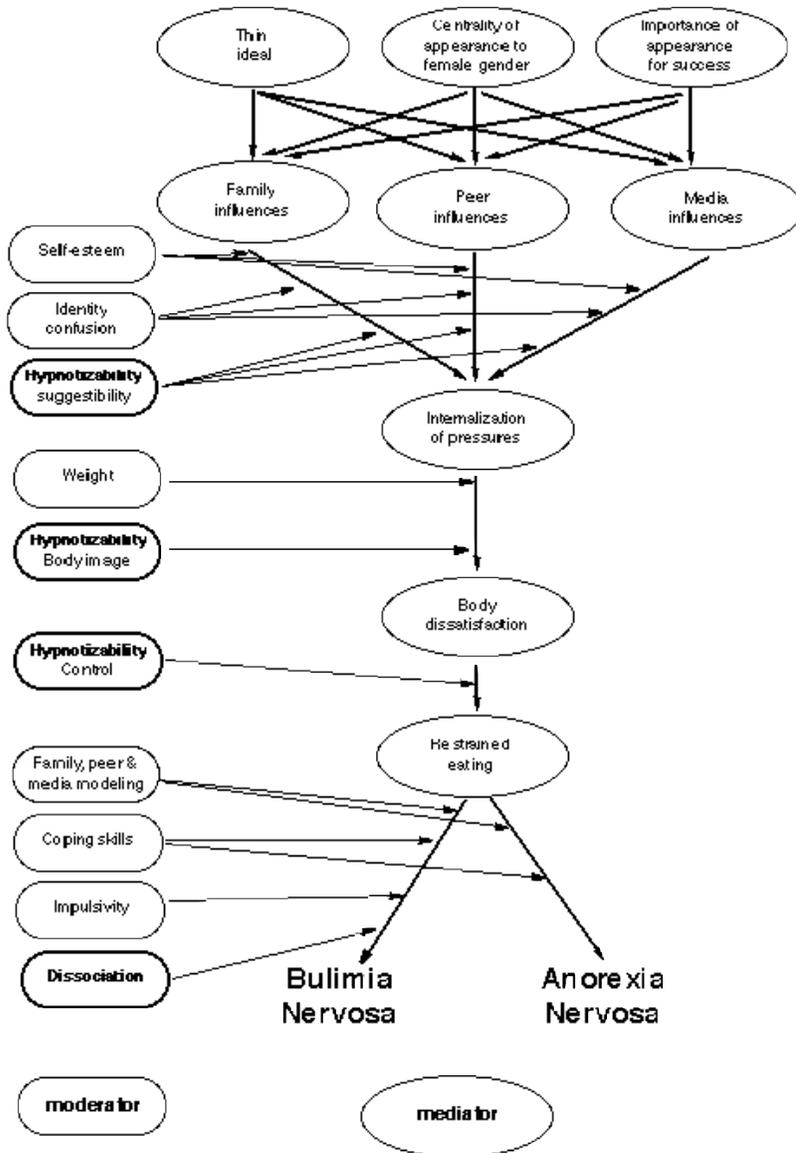


Figure 1. A sociocultural model of the development of bulimia nervosa and anorexia nervosa showing moderator and mediator variables, modified after Stice (1994). Possible influences of hypnotizability and dissociation as moderator variables are indicated in addition to those proposed by Stice.

dietary restraint is a route into anorexic behaviour. What is needed is a longitudinal study that incorporates measures of both dissociation and hypnotizability. Nevertheless, the view that anorexics are highly hypnotizable in their pre-clinical phase has been promoted by Schumaker (1991), who refers to anorexia as an auto-suggestive disorder, as well as by Groth-Marnat (1991) and Kaffman (1991). The argument is supported by observations (e.g. Bruch, 1977) that preclinically anorexics are compliant and suggestible, whereas once the illness is established they become resistant, and overly-concerned with control, which would make testing for hypnotic susceptibility difficult. It is possibly relevant to note here that some anorexics appear

to prefer, and respond better to, an active-alert induction procedure where they are able to retain greater perceived control as well as to channel their activity (Bányai et al., 1993). Vanderlinden et al. (1995) also note from their own clinical experience that at the beginning of inpatient treatment the anorexic patients are often so emaciated and hyperactive they have difficulty in maintaining concentration and as a consequence they are likely to produce unreliable, low scores on tests of hypnotizability. For this reason, Vanderlinden et al. tested their anorexic patients on average three weeks after admission, when they had put on some weight and had become less motorically overactive, and found that they scored higher than normals, though not significantly so, on a hypnotizability scale (the SHCS). Interestingly, and somewhat counter to the argument being developed here, the anorexics in this study showed no greater resistance than the normal group to being tested for hypnotizability (as measured by the Dutch Resistance to Hypnosis Scale (DRHS), Spinhoven et al., 1993).

The above is clearly not the whole story but it perhaps suggests the utility of considering hypnotizability (or F-bias) as a more general trait and indicates more specifically how it might contribute with dissociative ability to the development of eating disorders.

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