THINK YOURSELF THIN: Concern for Appropriateness Mediates the Link Between Hypnotizability and Disordered Eating

RACHEL BACHNER-MELMAN
Ruppin Academic Center, Emek Hefer; and Hebrew University of Jerusalem, Israel

LILAC LEV-ARI
Ruppin Academic Center, Emek Hefer, Israel

RAZ LEVIN AND PESACH LICHTENBERG
Sarah Herzog Memorial Hospital and Hebrew University of Jerusalem, Israel

Abstract: There has been no research examining why people with disordered eating tend to be highly hypnotizable. The authors examine the hypothesis that concern for appropriateness mediates the association between hypnotizability and disordered eating. Fifty participants aged 15 to 30 completed the Eating Attitudes Test–26 (EAT–26) and the Concern for Appropriateness Scale (CAS) and were administered the Stanford Hypnotic Susceptibility Scale: Form C (SHSS:C). EAT–26 scores predicted CAS scores ($\beta = 0.24, p < .001$), CAS scores predicted SHSS:C scores ($\beta = 0.38, p < .001$), and the mediation model was significant (Sobel Test; $R^2 = .24$, $z = 2.54$, $p < .01$). Individuals with problematic eating attitudes may tend to be more hypnotizable than those with normal eating attitudes at least in part because they are highly influenced by interpersonal messages.

Research has consistently shown that individuals with disordered eating are highly hypnotizable, and various hypotheses have been proposed to explain this somewhat unintuitive fact. This study attempts to provide empirical support for one of these hypotheses, namely, that disordered eating is rooted in the overacceptance and automatic internalization of the hypnotic-like suggestion ubiquitously and repeatedly given by contemporary cultures to “be thin” (Schumaker...
We will first review the literature on the association between hypnotizability and eating pathology and propose that concern for appropriateness (Lennox & Wolfe, 1984), a concept shown to correlate both with hypnotizability (Levin et al., 2013) and disordered eating (Bachner-Melman et al., 2009), may mediate the established hypnotizability—disordered eating connection.

**Hypnotizability and Clinical Eating Disordered Populations**

**Bulimia Nervosa**

The first scientific report of high hypnotizability in women with bulimia nervosa (BN) was by Pettinati and her colleagues in 1985 (Pettinati, Horne, & Staats, 1985). She found that the mean scores of 21 women with BN on the Hypnotic Induction Profile (HIP; Spiegel, 1973), the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962), and the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C; Hilgard, 1965) were all higher than the scores of 65 women with anorexia nervosa (AN) on these standardized scales, although the difference did not reach significance using the HGSHS:A. When Barabasz (1991) compared the SHSS:C scores of 40 women with BN with those of 40 control women, she found the former to be significantly higher. Kranhold, Baumann, and Fichter (1992), using the German translation of the HGSHS:A, found that inpatients with BN were more hypnotizable than healthy controls matched for age and education. Griffiths and Channon-Little (1993), too, found a high level of hypnotizability for individuals with BN and partial syndromes compared with normal populations, and further support for the high hypnotizability of women with BN is not hard to find (Covino, Jimerson, Wolfe, Franko, & Frankel, 1994; SHSS:C; Vanderlinden, Spinhoven, Vandereycken, & Van Dyck, 1995).

**Anorexia Nervosa**

Whereas patients hospitalized with AN have on the whole been found to be less hypnotizable than women with BN, it seems that hypnotizability levels of women with the binge-purge subtype of AN tend to fall between the levels of women with BN and those with the restricting subtype of AN (Pettinati, Kogan, Margolis, Shrier, & Wade, 1989). Surprisingly, Bliss (1982) found a group of women with AN to be more hypnotizable than controls, although the failure to clearly specify subtypes seems to present a feasible explanation for this result (Vanderlinden et al., 1995). Vanderlinden, Vandereycken, Van Dyck, and Delacroix (1992) found that patients with restricting AN were less
hypnotizable than patients with BN and atypical eating disorders, and, in a later study, the same group of researchers found women with binge-purge AN to be more hypnotizable than women with restrictive AN yet no less hypnotizable than women with BN.

Hypnotizability and Eating Attitudes in Nonclinical Populations

Groth-Marnat and Schumaker (1990) found that high levels of hypnotizability as measured by the HGSHS:A in female college students correlated \( r = .30, p < .01 \) with high concerns about body weight and shape as measured by the Eating Attitudes Test–26 (EAT–26; Garner, Olmsted, Bohr, & Garfinkel, 1982). The interpretation they suggested was that hypnotizability may be a predisposing factor in the development and maintenance of negative attitudes towards eating and weight regulation. Wybraniec and Oakley (1996) found a strong correlation \( r = .55; p < .01 \) between restrained eating as defined by the first factor of the Three Factor Eating Questionnaire (TFEQ; Stunkard & Messick, 1985) and hypnotizability as measured by the Creative Imagination Scale (CIS; Wilson & Barber, 1978). Frasquilho and Oakley (1997) confirmed these results \( r = .66; p < .001 \) in 40 female undergraduates of normal body weight, and Frasquilho, Oakley, and Ross-Anderson (1998) extended them by using the Revised Restraint Scale (Herman & Polivy, 1980) in addition to the TFEQ.

This brief review shows clearly that women with eating disorders, especially those who binge and purge, as well as nonclinical populations characterized by restrained eating and weight and shape concerns, tend to have elevated scores on tests of hypnotic susceptibility.

The Relevance of Concern for Appropriateness to Hypnotizability and to Eating Pathology

Concern for appropriateness (Lennox & Wolfe, 1984) is a protective self-presentation style in social interaction driven by a motivation to fit in with other people by avoiding disapproval and subjective failure in interpersonal relations. People high in concern for appropriateness tend to be sensitive to cues from their social environment about the appropriateness of their appearance and behavior in the eyes of others and avoid standing out. They tend to comply with external guidelines and authorities (Arkin, 1981) and sales requests (Celuch & Slama, 1995), to conform as consumers (Bearden & Rose, 1990), and to be sensitive to interpersonal influence (Bearden, Netemeyer, & Teel, 1089; Netemeyer,
Notably, this research-based profile could be applied both to people who change their eating attitudes and behaviors in response to the direct or indirect suggestion that they should be thin and to people motivated to comply with hypnotic suggestions. High concern for appropriateness has in fact been shown to characterize both of these populations (Bachner-Melman et al., 2009; Levin et al., 2013).

It has been proposed that suggestibility underlies the transmission of shared beliefs about thinness within families and cultures, and that extreme food restriction can be seen as an unquestioning over-acceptance of the all-pervasive culture-based suggestion to “be thin” (Groth-Marnat & Schumaker, 1990; Schumaker & Groth-Marnat, 1988). In other words, overconcern with eating can be seen as attributable in part to susceptibility to suggestions to “be thin” and is, therefore, more likely to occur in hypnotically susceptible persons. In an attempt to provide support for this hypothesis, this study aims to replicate the association between hypnotizability and disordered eating and to examine whether concern for appropriateness mediates this association.

**Method**

**Participants**

Fifty participants (33 women, 17 men), aged between 15 and 30 years of age ($M = 23.6$, $SD = 4.1$), participated in the study. They were a subset of participants who had participated in a large genetic study on personality and eating attitudes (Bachner-Melman et al., 2005), who agreed to undergo hypnosis for a study on hypnotizability. They were originally recruited by advertisements at a university campus in Jerusalem, by announcements in local newspapers, and by word of mouth. Screening interviews ruled out a history of psychiatric or neurologic disease, drug abuse, head trauma, or treatment with psychotropic medications.

**Instruments**

The Concern for Appropriateness Scale (Lennox & Wolfe, 1984) is a 20-item questionnaire measuring a defensive self-presentation style or the tendency to fit in socially and to avoid standing out as different. It has 20 items scored on a 6-point Likert scale that comprise two subscales: a 13-item Attention to Social Comparison Information subscale that measures sensitivity to social interactions and a seven-item Cross-Situational Variability subscale that reflects behavioral adaptation to changing social circumstances. Examples of CAS items are the following: “It’s important for me to fit in with the group I’m with,” “It is my feeling that if everyone in a group is behaving in a certain manner, this must be the proper way to behave,” and “At parties, I usually try
to behave in a manner that makes me fit in.” The CAS has excellent psychometric properties (Celuch, Slama, & Schaffenacker, 1997; Cutler & Wolfe, 1985; Johnson, 1984; Miller, Omens, & Delvadia, 1991) with coefficient $\alpha$ values consistently above .80 and a test-retest correlation of .84 after 3 weeks (Johnson, 1984). The Hebrew version used in this study (Bachner-Melman, Bacon-Shnoor, Zohar, Elizur, & Ebstein, 2009) has been used in previous research.

The EAT–26 (Garner et al., 1982) is a 26-item self-report factor analytically derived scale assessing disturbed eating attitudes and behaviors. It is an abbreviated version of the EAT-40 (Garner & Garfinkel, 1979) and is widely used as a screen for eating disorders. The three subscales of the EAT–26 are Dieting (e.g., “I am preoccupied with a desire to be thinner”), Bulimia (e.g., “I vomit after I have eaten”), and Oral Control (e.g., “I take longer than others to eat my meals”). Scoring is on a 6-point Likert scale with answers ranging from never to always. The EAT–26 has demonstrated excellent reliability in previous studies and, in this study, the Cronbach’s alpha was .93. A Hebrew translation has been used widely for research and for clinical purposes (Koslowsky et al., 1992).

The Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C; Weitzenhoffer & Hilgard, 1962) is an individually administered test of hypnotizability. The suggestions are offered in order of increasing difficulty and include lowering of an outstretched hand while imagining holding a heavy weight, hypnotic dreaming, age regression to the fifth and second grades, auditory hallucinations, negative visual hallucinations, and more (Hilgard, 1965). One point is awarded for each of 12 suggestions responded to (as judged by the hypnotist according to objective criteria), resulting in a hypnotizability score between 0 and 12. A Hebrew version previously used in research was used (Lichtenberg, Shapira, Kalish, & Abramowitz, 2009).

Procedure

The study was approved by the Herzog Hospital Institutional Review Board. All participants provided written informed consent, and parents also gave written consent for participants under the age of 18. Participants received nominal payment to complete the CAS and the EAT–26 and to undergo hypnosis. They were individually administered the SHSS:C by one of the authors (PL), who was blind to the participants’ questionnaire responses at that time.

Results

Descriptive Statistics

Means, standard deviations, skewness, and kurtosis for all variables are shown in Table 1. All data are presented as raw scores, since they
Table 1
Means, Standard Deviations, Range, Skewness, and Kurtosis of Concern for Appropriateness, Disordered Eating, and Hypnotizability

<table>
<thead>
<tr>
<th>Indices</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern for appropriateness</td>
<td>52.33</td>
<td>12.67</td>
<td>13–89</td>
<td>−.12</td>
<td>.20</td>
</tr>
<tr>
<td>Disordered eating</td>
<td>31.36</td>
<td>18.19</td>
<td>0–95</td>
<td>.85</td>
<td>.49</td>
</tr>
<tr>
<td>Hypnotizability</td>
<td>5.46</td>
<td>2.72</td>
<td>0–12</td>
<td>.18</td>
<td>−.56</td>
</tr>
</tbody>
</table>

*The actual range of answers.

Table 2
Correlations Between Concern for Appropriateness, Disordered Eating, and Hypnotizability

<table>
<thead>
<tr>
<th></th>
<th>Disordered eating</th>
<th>Hypnotizability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern for appropriateness</td>
<td>.24***</td>
<td>.43**</td>
</tr>
<tr>
<td>Disordered eating</td>
<td></td>
<td>.33*</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001, two-tailed.

are easier to interpret. The distributions of scores for all variables in this study were normal. Correlations between the variables assessed are presented in Table 2. As expected, the correlation between disordered eating and hypnotizability was positive and significant, meaning that the more disordered an individual’s eating attitudes, the more hypnotizable he or she tended to be. Moreover, the correlations between concern for appropriateness and disordered eating, and between concern for appropriateness and hypnotizability were significant and positive.

Primary Analysis

Step 1: Direct effects of disordered eating on hypnotizability. Disordered eating significantly predicted hypnotizability ($\beta = 0.33$, $p < .05$).

Step 2: Direct effects of disordered eating on concern for appropriateness. Disordered eating significantly predicted concern for appropriateness ($\beta = 0.24$, $p < .001$).

Step 3: Direct effects of concern for appropriateness on hypnotizability. Concern for Appropriateness significantly predicted hypnotizability ($\beta = 0.38$, $p < .001$).

Step 4: Mediation effects of concern for appropriateness on the association between disordered eating and hypnotizability. The Sobel Test revealed a significant mediation effect ($z = 2.54$, $p < .01$). Figure 1 presents the mediation model showing a direct and significant effect of disordered eating on hypnotizability.
eating on hypnotizability. Overall, the magnitude of the indirect effect of the mediation model (variance in hypnotizability accounted for by the indirect effect) was significant ($R^2 = .24$) and accounted for 24% of the total variance.

**Discussion**

In this study, concern for appropriateness mediated the link between hypnotizability and disordered eating. This suggests that participants with problematic eating attitudes were more hypnotizable than those with healthier eating attitudes, inter alia because they were more sensitive to social cues that guided their behavior and tended to adapt their behavior to contextual circumstances and expectations.

High susceptibility to suggestions in the context of interpersonal messages may explain at least in part why people with eating problems tend to be hypnotizable. Such messages include the “thin ideal” promulgated by the media in contemporary Western society, as well as suggestions offered by the hypnotist in the hypnotic situation.

In 1981, Mordecai Kaffman proposed the concept of “monoideistic disorders” that acquire the quality of repetitive hypnotic suggestions or “inner commands” (Kaffman, 1981). Monoideistic preoccupations, according to Kaffman, create an altered state of consciousness that transcends the limits of volitional control, drain psychic energy, encourage self-defeating thinking and can take over an individual’s entire life. Ten years later, he presented AN as a paradigm for this concept (Kaffman, 1991).

Several other researchers have emphasized the monoideistic nature of eating disorders and of intrusive thoughts about food intake and
weight regulation, which perpetuate the preoccupation with a need to be thinner (Covino et al., 1994; Groth-Marnat & Schumaker, 1990; Schumaker, Warren, Schreiber, & Jackson, 1994). Our results support this view and suggest that internalized beliefs that slim = good can result in repetitive autosuggestions regarding weight regulation and food intake.

Clinical observations also support this claim. For example, women with AN report constant, obsessive and relentless thoughts, often described as “voices,” about the need to refrain from eating and/or the need to lose weight (Tierney & Fox, 2010). Women with eating disorders seem to experience self-talk about eating, weight, and self-worth that is qualitatively and quantitatively distinct from other women, commonly reporting specific thoughts at least several times per day (Stock, Hanstock, & Thornton, 2014). The thinking of these thoughts can be seen as resulting in a sort of autosuggestion akin to self-hypnosis, leading to the maintenance of self-defeating thoughts and disordered eating behaviors.

Optimistically, results may have implications for working therapeutically with people with eating disorders or disordered eating. First, Kaffman (1981) recommended that “any comprehensive form of therapy should offer formulations and precise procedures—for the identified patient, nuclear family, and network of significant others—to block the feedback supplying system attached to the monoideistic pattern” (p. 243).

Second, hypnotherapy may be an approach to treatment worthy of further attention. Although the evaluation of hypnotherapy is often hindered by methodological limitations, there is no shortage in the literature of case reports and guidelines for the use of hypnosis in the treatment of eating disorders (Barabasz, 1990; Georgiou, 1995; Griffiths, 1997; Gross, 1983; Hornyak, 1996; Parker, 1994; Pettinati et al., 1989; Spiegel & Spiegel, 1978; Vanderlinden & Vandereycken, 1990). Hypnotherapy has been found to be effective for BN (Barabasz, 2007; Griffiths, 1995) as well as for AN (Baker & Nash, 1987; Barabasz, 2007).

Finally, people particularly influenced by the thin ideal may, happily, also be strongly influenced by therapy in which they genuinely engage. Notably, high school girls who reported the greatest tendency to engage in extreme dieting behaviors also showed the greatest reduction in these attitudes following a videotape presentation depicting the dangers associated with radical weight control measures (Schumaker & Groth-Marnat, 1987).

Since this study includes a small number of participants, the results should be viewed cautiously. Future research should examine hypothesis with a larger sample so that data for women and men can be examined separately. There are without a doubt additional explanations for the link between hypnotizability and eating problems. Dissociation,
for example, so central to the ability to be hypnotized (Whalen & Nash, 1996), is often described in connection with eating disorders (Schumaker et al., 1994). Dissociative aspects of hypnotizability may contribute to the high hypnotizability found in individuals showing extreme concern with food regulation, over and beyond suggestibility, and future research should explore the larger picture.

This study suggests that suggestibility contributes to the development and maintenance of eating pathology. A better understanding of the association between hypnotizable and eating problems stands to contribute to the efficacy of hypnotherapy for eating pathology. However, the implications of these results transcend this hope and open up the potential implications of research on suggestibility. In the view of Clarke Hull, a change in suggestibility constitutes “the essence of hypnosis” (Hull, 1933, p. 391). It has recently been pointed out that hypnotic suggestion comprises merely one element of the suggestibility continuum, and that it is in fact an important domain in its own right (Kirsch et al., 2011). In the words of Halligan and Oakley (2014), “it seems timely to explore the broader elements of the suggestion/suggestibility continuum with a view to seeing if the different forms of hypnotic and nonhypnotic suggestibility provide some basis for elucidating an underlying, shared psychological capacity or trait” (p. 115). The present study does precisely that and provides an example of perhaps many more to come of “suggestibility’s demonstrable potential as a powerful causal explanatory framework for many aspects of human behavior” (Halligan & Oakley, 2014, p. 109).

References


“Denke Dich schlank”: Die Sorge um die Angemessenheit vermittelt die Verbindung zwischen Hypnotisierbarkeit und krankhaften Eßgewohnheiten

Rachel Bachner-Melman, Lilac Lev-Ari, Raz Levin und Pesach Lichtenberg

Abstract: Bisher gab es noch keine Forschung darüber, weshalb Menschen mit krankhaften Eßgewohnheiten dazu tendieren, hoch hypnotisierbar zu sein. Die Autoren untersuchen die Hypothese, daß die Sorge um Angemessenheit die Beziehung zwischen Hypnotisierbarkeit und krankhaftem Essen vermittelt. 50 Teilnehmer zwischen 15 und 30 Jahren füllten den Eating Attitudes Test–26 (EAT–26) und die Concern for
Appropriateness Scale (CAS) aus und wurden der Stanford Hypnotic Susceptibility Scale : Form C (SHSS:C) zugeführt. EAT–26 Ergebnisse sagten CAS-Werte voraus (beta \(= 0.24, p < 0.001\)), CAS-Werte sagten SHSS:C-Werte voraus (beta \(= 0.38, p < 0.001\)) und das Mediationsmodell war signifikant (Sobel Test; \(R^2 = 0.24, Z = 2.54, p < 0.01\)). Menschen mit problematischem Verhältnis zum Essen mögen zumindest zum Teil dazu tendieren, hypnotisierbarer zu sein als solche mit normalen Eßgewohnheiten, weil sie sehr durch interpersonelle Rückmeldungen beeinflusst werden.

**Stephanie Reigel, MD**

Percevez-vous comme étant mince : le souci du jugement des autres intervient dans le lien entre l’hypnotisabilité et les troubles de l’alimentation

**Rachel Bachner-Melman, Lilac Lev-Ari, Raz Levin et Pesach Lichtenberg**

Résumé: Il n’existait jusqu’à maintenant aucune recherche examinant la raison pour laquelle les personnes ayant des troubles de l’alimentation ont tendance à être facilement hypnotisables. Les auteurs ont examiné l’hypothèse selon laquelle le souci du jugement des autres intervient dans le lien entre l’hypnotisabilité et les troubles de l’alimentation. On a administré à 50 participants âgés de 15 à 30 ans le test Eating Attitudes Test–26 (EAT–26) et l’échelle Concern for Appropriateness Scale (CAS), ainsi que l’échelle de susceptibilité hypnotique de Stanford : Formulaire C (SHSS:C). Les scores obtenus au test EAT–26 ont prédit les scores obtenus au CAS (\(\beta = 0.24, p < 0.001\)), les scores CAS ont prédit les scores SHSS:C (\(\beta = 0.38, p < 0.001\)), et le modèle de médiation a été significatif (test de Sobel; \(R^2 = 0.24, Z = 2.54, p < 0.01\)). Les personnes ayant des comportements alimentaires problématiques peuvent avoir tendance à être plus hypnotisables que celles ayant des comportements alimentaires normaux, en partie parce qu’elles sont fortement influencées par les messages interpersonnels.

**Johanne Raynault**

C. Tr. (STIBC)

Piénsate delgado: La preocupación por lo apropiado medía el nexo entre hipnotizabilidad y la alimentación trastornada

**Rachel Bachner-Melman, Lilac Lev-Ari, Raz Levin, y Pesach Lichtenberg**

Resumen: No ha habido investigación que examine por qué las personas con una alimentación trastornada tienden a ser altamente hipnotizables. Los autores examinan la hipótesis de que la preocupación por lo apropiado medía la asociación entre hipnotizabilidad y la alimentación trastornada. Cincuenta pacientes entre los 15 y 30 años de edad completaron el Eating Attitudes Test–26 (EAT–26) y la Escala de Preocupación por lo Apropiado (CAS; por sus siglas en Inglés), y se les administró la Escala Stanford de Susceptibilidad Hipnótica, Forma C (ESSH:C). Las puntuaciones de la EAT–26 predijeron las puntuaciones de la CAS (\(\beta = .24, p < .001\)), las puntuaciones de CAS
predijeron las puntuaciones de la ESSH:C ($\beta = .38$, $p < .001$), y el modelo de mediación fue significativo (Prueba Sobel; $R^2 = .24$, $Z = 2.54$, $p < .01$). Los individuos con actitudes problemáticas de alimentación podrían tender a ser más hipnotizables que los sujetos con actitudes normales de alimentación en parte, al menos, porque son altamente influenciables por mensajes interpersonales.

Omar Sánchez-Armáss Cappello, PhD
Autonomous University of San Luis Potosi, Mexico