

# Gender-Related Self-Discrepancies and Bulimic Eating Behavior

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The purpose of this study was to explore a hypothetical link between the development of bulimic eating behavior and the suppression of masculine traits in adolescence. Discrepancies between the actual and the ideal self were examined as precursors of negative self-evaluation and binge-purge behavior. Using the Bem Sex-Role Inventory (Bem, 1974), 821 German students between the ages of 13 and 20 were questioned anonymously. Data were analyzed with structural equation modeling. For girls in contrast to boys, the discrepancy between how much adolescents believed that they possess masculine traits (actual self) and how much they would like to (ideal self) was significantly greater at older ages. For both sexes, gender-related self-discrepancies were related to bulimic symptoms indirectly, via self-esteem and dieting.

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**KEY WORDS:** adolescent girls and boys; bulimic symptoms; self-esteem; gender stereotypes; self-discrepancy.

In the past three decades, a new eating disorder diagnosis—bulimia nervosa—has been developed, and the prevalence of related problems seems to have increased in Western countries (American Psychiatric Association [APA], 1994; Boskind-Lodahl, 1976; Bruch, 1973; Hart & Kenny, 1997). Key symptoms—binge eating (rapid consumption of large amounts of food) and compensatory behaviors (such as self-induced vomiting, fasting, and excessive exercise)—are perceived as socially inappropriate. Correspondingly, individuals with bulimia typically feel ashamed of these behaviors, and they practice them in secrecy. Bulimia is not associated with visible weight deviations and is difficult to detect.

In theory, the feminist notion that eating disorders are symptoms of the oppression of women is frequently acknowledged (Steiner-Adair, 1990). In practice, research on the development of bulimic eating behavior has focused primarily on studying adult women and individual psychopathology (Crandall,

1988). Over 90% of diagnosed eating disorders are in women. The risk of developing this problem is also related to age: Bulimic eating disorders are particularly common among adolescent girls and young women from 15 to 24 years of age (Soundy, Lucas, Suman, & Melton, 1995). Most studies, however, have not included adolescents, presumably because empirical data from underage participants is more difficult to collect.

The emergence of bulimia has been linked to a shift in Western standards of physical attractiveness toward increased thinness (Striegel-Moore, Silberstein, & Rodin, 1986). In our culture, physical attractiveness is more significant for females than for males over the life span (Pliner, Chaiken, & Flett, 1990; Striegel-Moore, 1993; Unger & Crawford, 1992). Evaluations are based on different standards for each sex: thinness versus muscular strength (Vartanian, Giant, & Passino, 2001). Physical maturation in adolescence inevitably involves significant weight gain, which means a development away from the thin ideal for adolescent girls. The high occurrence of body and weight dissatisfaction as well as weight control via restriction of food intake or dieting is attributed to the discrepancy between their own

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bodies and the thin ideal (Pliner et al., 1990; Polivy & Herman, 1987; Rodin, Silberstein, & Striegel-Moore, 1985). One regulatory feature of the biological system is that restriction will elicit strong urges to initiate eating (Blundell & Hill, 1993). Correspondingly, it has been shown that restrained eating or dieting causes binge eating (Polivy & Herman, 1985).

Bulimic eating behavior, however, is not limited to appearance-related self-discrepancies or Western culture (Siever, 1994; Strauman, Vookles, Berenstein, Chaiken, & Higgins, 1991). Studies have found similar rates of eating disturbances among women with little exposure to Western culture (Abdollahi & Mann, 2001; Klingenspor & Stetsenko, 1994). Such findings suggest that the thinness ideal may be a modern variant of established social norms and rules that regulate food consumption to the disadvantage of females. Traditional practices include the distribution of food in the family in a way that privileges men and boys over girls and women (La Vaque-Manty, 2001). Across cultures, social norms that regulate eating behavior may translate into unhealthy practices of food restriction for many women.

Eating behavior is regulated by gender-specific social norms and self-presentational concerns. Similar to physical appearance, eating behavior modifies social perception and evaluations of women. Like thinness, eating lightly projects a desirable feminine image to others and functions as a social indicator of femininity (Mori, Chaiken, & Pliner, 1987; Schlenker, 1986). In experimental settings, women who consumed smaller meals or dieted were rated as more feminine, less masculine, and more favorable in general (Chaiken & Pliner, 1987; Mooney & Lorenz, 1997). Larger meals were associated with masculinity (Bock & Kanarek, 1995). Women have been shown to eat less in order to make a more desirable impression (Mori et al., 1987; Pliner & Chaiken, 1990). In fact, women have been shown to reduce their food intake in response to gender-related feedback. Women ate less when feedback indicated (1) that they had very masculine interests and the confederate was aware (vs. unaware) of this, or when they were informed (2) that they had very feminine interests and the confederate was unaware (vs. aware) of this (Mori et al., 1987).

Fundamentally, researchers and clinicians have attributed bulimic eating behavior to the composition of an individual's gender identity. Gender identity refers to how feminine and masculine an individual is according to social stereotypes of women and men (Ashmore, 1990; Tajfel & Turner, 1986; Williams,

1984). Distinct traits are associated with gender and underlie both gender stereotypes and gender roles themselves. Being feminine means being attuned to and responsive to the needs of others. Independence, competence, and assertiveness, the psychological tools for getting one's own needs met, define masculinity. People generally expect women to be more feminine and less masculine than men. Perhaps because of men's higher social status relative to women, masculine traits are valued over feminine traits. Gender, similar to age, functions as a diffuse status cue that organizes social interaction. Unless contrary evidence is presented, women are perceived as less competent and less able to act as a leader than are men (Broverman, Broverman, Clarkson, Rosenkrantz, & Vogel, 1972; Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1970; Conway, Pizzamiglio, & Mount, 1996; Conway & Vartanian, 2000).

Initially, an overidentification with feminine traits was hypothesized to underlie bulimic eating behavior (Boskind-Lodahl, 1976). Very feminine individuals were thought to invest more in order to meet beauty standards such as thinness. However, researchers have found that femininity had minimal or equivocal effects (Cash, Ancis, & Strachan, 1997). Instead, previous results point to the significance of masculinity. Bulimic eating behavior has been found to be associated with a less masculine self-concept (Cantelon, Leichner, & Harper, 1986; Dunn & Ondercin, 1981; Habermas, 1990; Klingenspor, 1987, 1994a, 1994b; Lewis & Johnson, 1985<sup>2</sup>).

Gender stereotypes are remarkably resistant to change and of self-perpetuating nature (Lenton, Blair, & Hastie, 2001). In contrast, gender identity is considered to be dynamic rather than fixed. Knowledge about gender is developed gradually, and more subtle aspects are still being learned during adolescence (Williams & Best, 1990). Traits that society generally recognizes as characterizing femininity and masculinity are thought to develop in varying degrees in both men and women (Bem, 1974). Studies have confirmed that gender identity is formed by the context in which one finds oneself (Auster & Ohm, 2000; Lippa & Tan, 2001). Adolescence, including developing independence from family and beginning sexual

<sup>2</sup>Lewis and Johnson (1985) reported no differences between bulimics and controls on masculinity and lower femininity scores in the bulimic group. However, unequal variances between groups on masculinity were apparently not taken into account (Steel & Torrie, 1980). A reanalysis of their data revealed that the masculinity scores were in fact significantly lower in the bulimic group.

relationships, is thought to be an uncertain time. From a life-span perspective, adolescence involves considerable changes regarding the definition of one's self and a movement toward stronger adherence to gender stereotypes (McNeill & Petersen, 1985).

Because of social changes toward less gender-role polarization in Western countries, masculine traits and roles have become more available and desirable for women. Because masculine traits are generally valued more, exercising masculine traits is presumably highly desirable for both sexes. However, women are still being pressured to correspond to traditional standards of femininity. Negative reactions are more or less likely when women behave in ways that are traditionally reserved for men. Findings that the average adolescent girl is more anxious, insecure, depressed, and self-conscious than her male counterpart could reflect this situation (Hurrelmann, 1991; Kandel & Davies, 1982; Petersen, Sarigiani, & Kennedy, 1991; Tobin-Richards, Boxer, & Petersen, 1983).

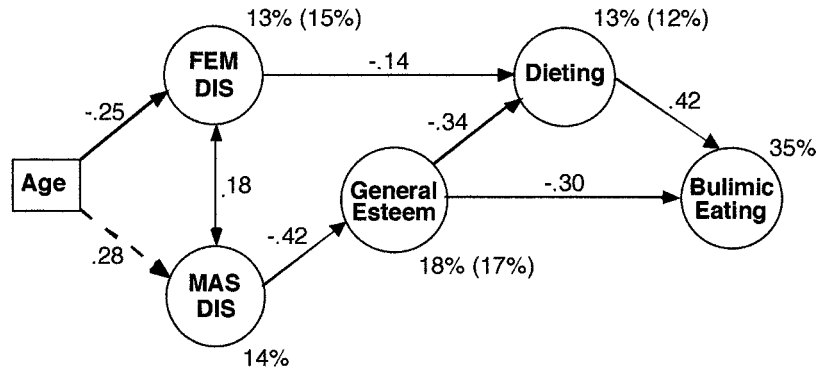
Self-discrepancy theory predicts that discrepancies between the actual and the ideal self-concept induce negative self-evaluation, dejection (e.g., dissatisfaction with self), and elicit self-regulatory processes aimed at reducing the negative affect (Straumann et al., 1991). From this perspective, two individuals may perceive themselves to have the same low standing in terms of masculine traits, for example, but one may have more (or less) self-esteem (Higgins, 1987; Newman, Higgins, & Vookles, 1992). The impact of the perception of the actual self depends on the individual's self-evaluative standards, particularly the ideal self (Higgins, 1987).

Greater discrepancies between the actual and the ideal self have been hypothesized to underlie eating disorders (Steiner-Adair, 1990). Women who incorporate high levels of both feminine and masculine qualities in their personal ideal are considered particularly at risk. According to Steiner-Adair (1990), women who incorporate the cultural ideal of autonomy and individuation come into conflict with an internal need to develop feminine-relational aspects of themselves. Others have argued that tensions develop when women seek achievement in areas traditionally dominated by men and experience external constraints that seem related to being female (Silverstein, Carpmann, Perlick, & Perdue, 1990). In this study, it is hypothesized that normal adolescent development involves striving for a more autonomous and individuated ideal self. Traits that are associated

with autonomy and individuality are generally recognized as masculine. Because masculine behavior is suppressed in women, the exercise of these traits is restricted and self-actualization is blocked. Subsequently, the actual self is perceived as less masculine, and actual-ideal discrepancies are predicted to increase.

Relationships between age, feminine and masculine actual-ideal discrepancy, general self-esteem (a composite of self and body esteem), dieting, and bulimic eating behavior were examined. Bulimic eating behavior is presumed to be distributed in the population, with diagnosed bulimia nervosa at the extreme end of a continuum of weight preoccupation and dieting (Polivy & Herman, 1987). Accordingly, bulimic eating behavior is conceptualized as a continuous variable. Dieting is known to be an important antecedent of binge eating (Polivy & Herman, 1985), and femininity has been found to be positively related to dieting among women (Lancelot & Kaslow, 1994). Greater masculine actual-ideal self-discrepancies have been found to be associated with less psychological health (Grimmell & Stern, 1992) and more disordered eating behavior (Paxton & Sculthorpe, 1991; Steiner-Adair, 1990). Thus, a general model was specified, in which (a) age is directly related to gender-related self-discrepancies, (b) dieting mediates the relationship between feminine actual-ideal discrepancies and bulimic eating, (c) self-esteem mediates the relationship between masculine actual-ideal discrepancies and bulimic eating, and (d) self-esteem is directly related to dieting and bulimic eating (see Fig. 1).

Within this framework, four specific hypotheses were investigated: (1) for girls in contrast to boys, masculine self-discrepancies will be greater at older ages; (2) for girls in contrast to boys, greater feminine actual-ideal self-discrepancies will be associated with more dieting; (3) for both girls and boys, greater masculine self-discrepancies will be associated with lower self-esteem; (4) lower self-esteem will be associated with more dieting and more bulimic eating behavior. This model was tested in a large sample of female and male adolescents and young adults. Multivariate methods of structural equation modeling were utilized for data evaluation. Major advantages of this methodology for theory development are (a) that complex relationships, including mediational variables, can be examined simultaneously and (b) that measurement error is taken into account via latent variables.



**Fig. 1.** Structural model with standardized maximum likelihood parameter estimates representing the relationships between age, gender-related self-discrepancies, general esteem, dieting, and bulimic eating behavior for female and male adolescents. *Note.* FEM DIS = Feminine Actual-Ideal Discrepancy; MAS DIS = Masculine Actual-Ideal Discrepancy. Circles represent latent constructs, unidirectional arrows depict hypothesized “causal” links, and bidirectional arrows reflect correlations between constructs. Parameter estimates that differ for male adolescents are presented in parentheses. Dotted lines represent paths that are significant in the female group only.

## METHOD

### Participants

The participants were 461 female and 360 male high school students between the ages of 13 and 20. Students were recruited from three Gymnasiums in Heidelberg and Mannheim, Germany. Students were primarily middle class; typically only 14% of Gymnasium students are blue collar (Köhler, 1992). For participants under 18 years, participation in this study was contingent on written parental consent. Seventy-one percent of all girls and 59% of all boys attending 8th–13th grade volunteered to participate in this anonymous questionnaire study. The mean age of female and male participants was 16 years ( $SD = 1.76$  vs.  $SD = 1.78$ ). The mean Body Mass Index [ $BMI = \text{weight (kg)} / \text{height}^2 \text{ (m)}$ ] was 19.97 ( $SD = 2.44$ ) for girls and 20.69 ( $SD = 2.55$ ) for boys.

### Constructs and Measures

Internal consistency reliabilities for the constructs and measures used in the structural modeling analyses are reported in Table I. All Cronbach alpha reliabilities exceeded .74. When necessary, test items were combined into groups of two or three parcels of items for the structural modeling analyses in order to measure the underlying construct at the latent level (Little, Das, Carlson, & Yachimowicz, 1993). Parcels or subscales of items were created by randomly assign-

ing items with one constraint. The constraint was that items with similar factor loadings were assigned to different parcels so that each parcel would represent the range of factor loadings. Forming parcels to represent a construct provides higher levels of reliability because this procedure amplifies what the items have in common relative to their unique specificities (Little et al., 1993). This way the unreliability of variables is taken into account, and tests of the relationships between constructs can be performed at the “error-free” latent variable level. In all analyses, correlated residuals that improve the model fit were not estimated.

### Bulimic Eating Behavior

In order to estimate the prevalence of bulimia nervosa according to *DSM-IV* criteria (American Psychiatric Association, 1994) in the population examined, participants were asked to indicate on a 5-point scale, which ranged from *never* (0) to *more than once a day* (4), how often each of the following symptoms had occurred during the last 3 months: “Binge-eating,” “self-induced vomiting,” “use of laxatives,” “use of diet pills,” “fasting (24 h or more),” and “excessive exercise.”

The bulimia subscales of the Eating Disorders Inventory (EDI; Garner, Olmsted, & Polivy, 1983) and the Anorexia Nervosa Inventory (ANIS; Fichter & Keeser, 1980) were used to measure bulimic eating behavior. Each item on both scales is presented with a 6-point scale, which ranges from *never* to

**Table I.** Internal Reliability Coefficients of Constructs and Measures: Mean Comparison on Measures by Sex Group

Construct measure	ICR	Girls		Boys		<i>t</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Bulimic eating behavior	.81					
EDI Bulimia	.75	1.81	.65	1.75	.60	1.24
ANIS Bulimia	.77	1.76	.91	1.74	.93	.73
Dieting	.83					
Desire to lose weight	s	0.63	.48 <sup>a</sup>	0.23	.42	12.63**
Present dieting	s	0.35	.48 <sup>a</sup>	0.11	.31	8.62**
Frequency of dieting	s	2.12	.85 <sup>a</sup>	1.45	.66	12.86**
General esteem	.77					
RSE	.84	2.72	.67	3.01	.59	-6.31***
SDQ-ATT	.86	2.50	.65	2.74	.69	-5.10***
Feminine actual-ideal discrepancy	.83	0.27	.46	0.41	.53	-3.98**
BSRI-F actual	.77	4.67	.53 <sup>a</sup>	4.47	.65	4.65**
BSRI-F ideal	.86	4.94	.57 <sup>a</sup>	4.88	.76	1.25
Masculine actual-ideal discrepancy	.88	0.82	.68	0.76	.64	1.31
BSRI-M actual	.87	4.37	.68	4.86	.73	-9.88***
BSRI-M ideal	.92	5.19	.66	5.61	.74	-8.58***

Note. ICR = Internal Consistency Reliability; s=Single-item measure. EDI = Eating Disorders Inventory. ANIS = Anorexia Nervosa Inventory. RSE = Rosenberg Self-Esteem Scale. SDQ-ATT = Self-Description Questionnaire-Attractiveness Scale. BSRI-F = Femininity Scale. BSRI-M = Masculinity Scale.

<sup>a</sup>Because of unequal variances between groups, statistics are reported according to Satterthwaite's formula, which is associated with a decrease in the degrees of freedom (Steel & Torrie, 1980).

\*\* $p < .001$ . \*\*\* $p < .0001$ .

*always*, to indicate the frequency of bulimic symptoms. The higher the numerical score, the higher the self-reported level of bulimic eating behavior. Participants rated items such as "I eat moderately in front of others and stuff myself when they're gone" and "I have the thought of trying to vomit in order to lose weight." The EDI Bulimia subscale includes seven items and the ANIS Bulimia subscale consists of two items. Items from both scales were combined into three parcels of three items each to represent the construct bulimic eating behavior.

The original scoring method of the EDI collapses the three most likely responses of nonbulimic respondents (i.e., never, rarely, and sometimes) to the score 0. This creates a skewed distribution and reduces the potential validity of the statistical analyses. Therefore, raw scores were used.

### Dieting

Three questions about dieting behavior were combined into two indicators to represent the construct dieting. Participants were asked "Would you like to lose weight?" and "Are you currently dieting to lose weight?" Possible responses were *yes* (1) or

*no* (0). Both items were combined into a single 3-point scale. The third question "How often have you tried to lose weight by dieting?" was presented with a 4-point scale that ranged from *never* (1) to *constantly* (4) and constituted the second indicator.

### General Esteem

Two subscales of a German version of the Self-Description Questionnaire (SDQ III-G; Hörmann, 1986; Marsh & O'Neill, 1984), General Self-Concept and Physical Attractiveness, were used as indicators of the construct general esteem. The SDQ is a multidimensional measure of self-concept. Version III is designed for adolescent and adult samples. The General Self-Concept subscale corresponds to the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965). The participant was requested to self-estimate herself or himself as a capable, effective individual with self-sufficiency. The Physical Attractiveness scale corresponds to the Physical Appearance scale (ATT; Hörmann, 1986; Marsh & O'Neill, 1984). The participant was requested to self-estimate how attractive she or he is. Both tests consist of 10 Likert-type items, statements to which the participant indicates

agreement on a 5-point scale, according to her or his own notions. Both tests measure how participants perceive themselves and how they believe others perceive them. The higher the numerical score, the higher the self-reported level of self-esteem and physical attractiveness.

### *Feminine and Masculine Self-Discrepancies*

A German version of the Bem Sex Role Inventory (BSRI; Bem, 1974; Schneider-Düker & Kohler, 1988)<sup>3</sup> was used to measure feminine and masculine self-discrepancies. The BSRI contains three subscales, two of which were used in this study. Participants were given the Femininity subscale (e.g., “dependent,” “sensitive,” “warm”) and the Masculinity subscale (e.g., “intelligent,” “determined,” “competitive”), which consist of 20 items each. First (BSRI-Actual), participants were asked to rate how true of them each of the feminine and masculine attributes was at present. Second (BSRI-Ideal), the same items were presented again, and participants were asked to describe their personal ideal self. Items were administered with a 7-point rating scale that ranged from *never or almost never true* to *always or almost always true*.

Difference scores for each item on both subscales were computed by subtracting the actual rating from the ideal rating. The resulting 20 feminine discrepancy items were combined into three parcels of six or seven items to represent the construct feminine self-discrepancies. The same procedure was used to measure masculine self-discrepancies at the latent level.

### **Procedure and Analysis**

Participants were instructed to complete the self-report questionnaires anonymously during one class period. Measures to determine self-esteem, physical attractiveness, actual and ideal gender identity, dieting, and bulimic eating behavior were presented in this order. The author supervised the testing. Participants were debriefed that the purpose of this study was to examine the social conditions of eating disorders.

The general model described above was transformed into systems of linear structural equations

and tested with mean and covariance structure analysis (see Bentler, 1980, 1989; Bentler & Weeks, 1980; Jöreskog, 1977, 1978; McArdle & McDonald, 1984). First, a series of models was tested to develop the measurement model, including a model with separate factors for self-esteem and body-esteem. This construction was rejected: both variables had high loadings on one factor and similar relationships to the other variables measured in both groups. Therefore, a latent variable—general esteem—was constructed using self-esteem and body-esteem as indicators. Structural equation modeling included a measured variable for age and latent variables for feminine and masculine self-discrepancies, general esteem, dieting, and bulimic eating behavior.

Second, the equivalence of constructs across groups was tested in order to determine whether comparisons across sex-groups are possible. Construct equivalence was examined by testing measurement invariance using a modeling rationale (incremental fit indices). Because of dependence on sample size and model complexity the application of chi-square as a general indicator of goodness-of-fit is problematic (see Bearden, Sharma, & Teel, 1982; Boomsma, 1982; Marsh, Balla, & McDonald, 1988). The incremental goodness-of-fit indices used to evaluate model fit included the Normed Fit Index (NFI), the Non-Normed Fit Index (NNFI), and the Comparative Fit Index (CFI; Bentler, 1989; Bentler & Bonett, 1980). The hypothesis of invariance was accepted if (a) the incremental fit indices of the model with invariance constraints (equivalence of factor loadings and variable intercepts across groups) were adequate (i.e.,  $>.9$ ), and (b) the differences between the noninvariance model and the invariance model in terms of the fit indices were negligible (i.e.,  $<.05$ ).

Third, multiple-group analyses were performed to test the hypothesized structural model in both sex-groups. Nested model comparisons between the measurement invariance and the structural model were performed using a statistical rationale (i.e.,  $\chi^2$ -difference test). A specification search based on the Lagrange Multiplier Test (Bentler, 1989) was conducted to determine whether the free estimation of additional structural parameters would significantly improve the model fit.

### **RESULTS**

Because of missing data, 9 participants (3 girls and 6 boys) were excluded from the analyses. Data were inspected for multivariate normality. A check on

<sup>3</sup>The German version of the BSRI (Schneider-Düker & Kohler, 1988) that was administered does not include the two items “feminine” and “masculine” that were considered problematic in the original version by Bem (see Ashmore, 1990; Pedhazur & Tetenbaum, 1979).

skewness and kurtosis revealed elevated estimates for the variables that measured bulimic eating behavior. Therefore, the bulimia item parcels were transformed by taking the reciprocal of each value (Tabachnick & Fidell, 1989). Transformations reduced skewness and kurtosis in the bulimia variables, so that all variables were within the range of +1 and -1.

## Descriptive Analyses

### *Bulimic Eating Behavior*

An estimated 2.6% of girls and 5.6% of boys between the ages of 13 and 15 met modified *DSM IV* criteria for bulimia nervosa (APA, 1994).<sup>4</sup> The higher prevalence of bulimia among younger boys compared to previous findings may be due to the inclusion of "excessive exercise" as a symptom of bulimia nervosa. For girls in contrast to boys, the prevalence of bulimia nervosa was much higher in later adolescence. According to the criteria that were used, the prevalence more than tripled to 8.9% among girls between the ages of 16 and 18. In contrast, it went down to 3% among boys in this age group.

### *Dieting*

About 3 times as many girls as boys reported the desire to lose weight (62% vs. 23%) and attempts to lose weight (34% vs. 11%). Compared to 31% of girls, only 8% of boys were often or constantly attempting to lose weight.

### *General Esteem*

Significant gender differences were found on general esteem (i.e., body and self-esteem). Girls had significantly lower means on self-esteem and physical attractiveness than boys had (Table I).

### *Feminine and Masculine Self-Discrepancies*

As expected, girls described their actual self as significantly more feminine than did boys. Compared to boys, the mean actual-ideal discrepancy on feminine traits was significantly smaller among girls due to higher levels of femininity in the actual self.

As expected, girls also described their actual self as significantly less masculine than did boys. The average actual-ideal masculine discrepancy score did not differ between groups.

## Structural Modeling Analyses

Raw data were analyzed with mean and covariance structure analysis using the micro-mainframe program EQS (Version 3.0; Bentler, 1989).<sup>5</sup> In order to test measurement invariance, two nested two-group models were compared via incremental fit indices. In the first model (M-0), all parameters were freely estimated for both sex groups (NFI = .92, NNFI = .94, CFI = .96). In the second model (M-1), factor loadings and variable intercepts were constrained to be equal across groups (NFI = .91, NNFI = .94, CFI = .95). As shown in Table II, the invariance constraints across groups had little influence on the model fit. The results indicate measurement invariance, which demonstrates that the prerequisite for comparing subsamples (i.e., the generalizability of the constructs) was met.

The correlations among constructs at the latent level for each sex group are shown in Table III. For both sexes, relatively strong relationships were found between masculine self-discrepancies and general esteem, and bulimic eating behavior, and dieting and bulimic eating behavior. Feminine discrepancies were significantly, albeit weakly, related to age, masculine self-discrepancies, and general esteem. A more moderate relationship was also found between general esteem and dieting. In addition, the results indicated that masculine discrepancies were positively related to age among girls in contrast to boys. Masculine discrepancies, but not feminine discrepancies, were positively related to bulimic eating behavior in both groups.

The structural modeling analyses specified a general model (S-1) to evaluate the hypotheses outlined above. The inspection of parameter estimates supported the hypotheses. As reported in Table II, the nonsignificant  $\chi^2$ -difference between the measurement model (M-1) and the modified structural model (S-1) indicated an optimal model. Separate nested

<sup>4</sup>That is, they were binge-eating at least twice a week and used one or more than one of the following purging techniques: self-induced vomiting, use of laxatives, use of diet pills, fasting for more than 24 hr or more, and/or excessive exercise.

<sup>5</sup>Previous analyses have indicated that perceived masculinity in the actual self is related to esteem, and, via esteem, to bulimic eating behavior (Klingenspor, 1994b). Therefore, prior to the present analyses, hierarchical multiple regression analyses were performed to test whether gender-related actual-ideal discrepancies significantly add to the explanation of these constructs. The results indicated that this was the case ( $p < .01$ ).

**Table II.** Summary of Fit Indices and Nested Comparison of Two-Group Models for Adolescent Girls and Boys

Model	$\chi^2$	df	p	NFI	NNFI	CFI
Independence model	3557.25	182				
Measurement model						
M-0: Intercorrelated factor structure	276.55	126	<.001	.92	.94	.96
M-1: Invariance model	312.73	142	<.001	.91	.94	.95
Comparison with M-0				.01	.00	.01
Structural model						
S-1: General model	334.43	156	<.001	.91	.94	.95
Comparison with M-1	21.70	14	<i>ns</i>			
S-2: Final model <sup>a</sup>	344.16	164	<.001	.90	.94	.95
Comparison with M-1	31.43	22	<i>ns</i>			

Note. NFI = Normed Fit Index, NNFI = Non-Normed Fit Index, CFI = Comparative Fit Index (values greater than .9 on these indices indicate a good fitting model).

<sup>a</sup>see Fig. 1.

model comparisons were performed for each structural parameter in order to test whether the coefficients significantly differed between the girls and boys. When the effect of age on masculine discrepancies was set equal across groups, the model fit decreased significantly,  $\chi^2 = 16$ ,  $df = 1$ ,  $p = .001$ . With regard to all other parameters, the nonsignificant  $\chi^2$ -difference between the freely estimated model and the model in which parameters were set equal across groups indicated that these parameters did not differ across groups. The nonsignificant path between age and masculine discrepancies was dropped from the boys' model. With these modifications, a final model was specified and estimated (Fig. 1).

For both groups, the standardized values of the measurement model parameters are shown in Table IV. The structural parameters of the final model (S-2) are presented in Fig. 1. Compared to masculine discrepancies, feminine self-discrepancies were related to age in the opposite direction: For both sexes, discrepancies between the actual and the ideal self in terms of feminine traits were smaller at older ages.

The results mostly supported the hypotheses: (1) The mean discrepancy between actual and ideal masculine traits was greater among girls at older

ages, but not among boys (Fig. 2); (2) Feminine self-discrepancies were associated with dieting, albeit the effect size was relatively small. Contrary to expectation, (a) this relationship was significant for both sexes, and (b) smaller feminine self-discrepancies were associated with more dieting. (3) For both sexes, masculine self-discrepancies had a negative effect on general esteem; (4) For both sexes, lower self-esteem was associated with more dieting and more bulimic eating behavior.

**DISCUSSION**

In this study, I examined the role of self-discrepancies on gender traits in relation to both self-esteem and bulimic eating behavior among adolescents. For this purpose, self-report data were collected in a large sample of female and male adolescents. Structural modeling techniques were utilized to examine complex relations between the variables of interest simultaneously. In contrast to most previous studies, relationships between constructs were examined from a multivariate perspective, within a continuum that ranged from absence of bulimic symptoms to serious problems with bulimia. The similarities and

**Table III.** Correlations Between Latent Variables for Adolescent Girls and Boys (in Parentheses)

	1	2	3	4	5
1. Bulimic eating behavior					
2. Dieting	.58 ( .42)				
3. General esteem	-.45 (-.39)	-.33 (-.33)			
4. Feminine discrepancy	.04 (-.03)	-.06 (-.07)	-.19 (-.18)		
5. Masculine discrepancy	.21 ( .18)	.15 ( .08)	-.37 (-.44)	-.24 ( .39)	
6. Age	.15 (-.00)	.20 ( .01)	-.00 ( .12)	-.26 (-.18)	.24 (-.05)

Note. Nonsignificant correlations in italics.

**Table IV.** Measurement Model Parameters<sup>a</sup> of the Structural Model for Each Sex Group (Fig. 1)

	Girls	Boys
Bulimic eating <sup>b</sup>		
Bulimic1 <sup>c</sup>	.81	.78
Bulimic2	.73	.71
Bulimic3	.72	.67
Dieting		
Dieting1	.79	.79
Dieting2	.88	.77
General esteem		
Esteem1	.78	.79
Esteem2	.80	.74
Feminine discrepancy		
Feminin1	.51	.63
Feminin2	.61	.68
Feminin3	.56	.61
Masculine discrepancy		
Masculin1	.79	.74
Masculin2	.84	.81
Masculin3	.78	.76

Note. All parameters are significant. Differences in parameter estimators across groups are based on unequal variances of the latent factors.

<sup>a</sup>Maximum-likelihood estimators (standardized solution).

<sup>b</sup>Latent construct.

<sup>c</sup>Indicator.

differences found between girls and boys largely confirm the research hypotheses. Among other things, the results suggest that the transition from childhood to adulthood may be associated with the development of greater masculine actual-ideal discrepancies among girls. Of course, inferences based on cross-sectional data are tentative, and longitudinal data are needed to confirm within-subject change.

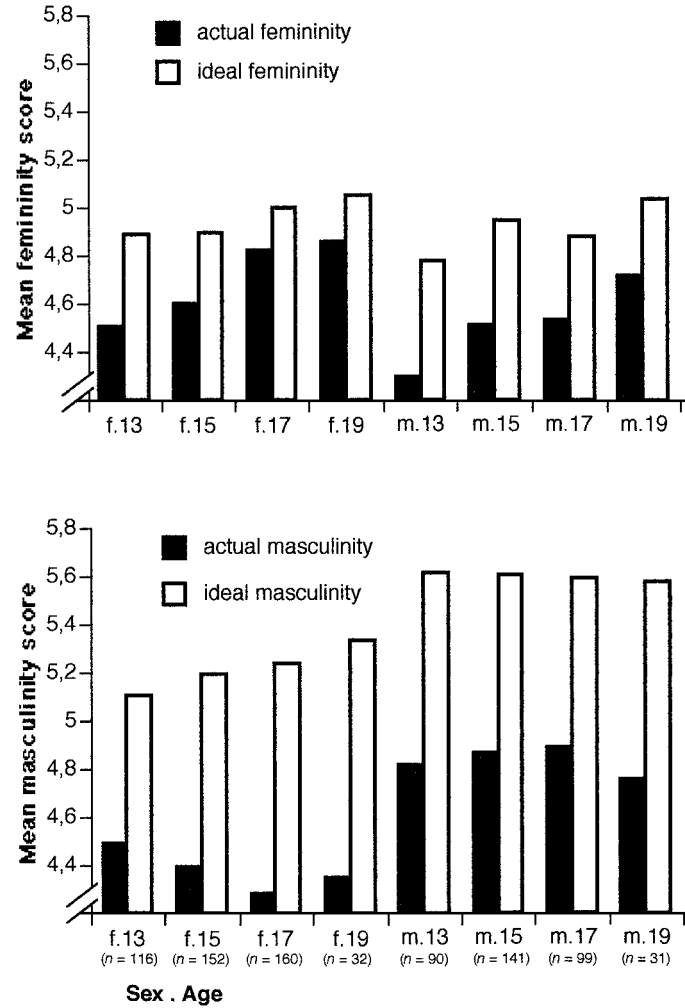
A mediational model including age as an independent variable was designed, and several hypotheses were tested. The first hypothesis that—for girls in contrast to boys—adolescent development involves increasing discrepancies between the actual and the ideal self on masculine traits was confirmed. (1) Age was found to predict masculine discrepancies for girls but not for boys. (2) Masculine discrepancies had a significant negative effect on self-esteem for both girls and boys. (3) Contrary to expectation, feminine discrepancies decreased with age and predicted dieting behavior for both sexes: Greater discrepancies were “good” in the sense that they were associated with less dieting. (4) Self-esteem predicted dieting and bulimic eating behavior for both sexes.

Although traits people recognize as “feminine” and “masculine” have been studied frequently, little is known about the development of discrepancies between actual and ideal self-conceptions of “feminin-

ity” and “masculinity” and how such discrepancies are related to bulimic eating behavior. Albeit contrary to self-discrepancy theory, the finding that smaller feminine discrepancies were directly associated with more dieting and indirectly with more bulimic eating behavior for both sexes is congruent with earlier findings that bulimic eating is linked to a high identification with feminine traits (Boskind-Lodahl, 1976). Individuals with smaller feminine discrepancies have femininity scores that are almost as high as they personally consider ideal. Feminine traits involve being attuned to and responsive to the needs of others. Very feminine individuals are thought to be more susceptible to social pressure or have a higher need for social approval and to invest more to meet the thinness ideal (e.g., diet more).

As expected, the BSRI (Bem, 1974) dimensions “femininity” and “masculinity” distinguished between the sexes in the sense that girls had higher mean scores on femininity and boys had higher mean scores on masculinity. Consistent with other findings, differences in the evaluative content of both dimensions were also confirmed in the sense that masculine traits were generally perceived as more valuable. Both girls and boys desired to have more masculine traits than feminine traits. Discrepancies between the actual self and the ideal self were significantly greater on the masculinity dimension for both sexes. For girls, the discrepancy between how much they exhibit masculine traits (actual self) and how much they would like to exhibit them (ideal self) increased significantly with age. The age-related increase of masculine discrepancies was partially based on decreasing masculinity in the actual self. This corresponds to the findings of a study of girls and boys between the ages of 8 and 10: Masculinity scores did not differ between girls and boys, but the femininity scores did (Thomas, Ricciardelli, & Williams, 2000). The present findings support the idea that adolescence is associated with the suppression of masculine traits in girls. For both sexes, larger masculine self-discrepancies were directly associated with lower self-esteem and indirectly associated with more bulimic eating behavior via self-esteem and dieting. Thus, masculine self-discrepancies appear to be a precursor of bulimic eating, mediated through general esteem, rather than a direct cause.

For both sexes, the results also suggest that feminine self-discrepancies change with age. In contrast to masculine discrepancies, actual-ideal discrepancies on feminine traits were smaller at older ages among both girls and boys. The hypothesis that feminine discrepancies are linked to dieting was confirmed.



**Fig. 2.** Age and gender-related actual-ideal self-discrepancies. *Note.* f.13 = females aged 13 or 14 years; m.13 = males aged 13 or 14 years; f.15 = females aged 15 or 16 years; . . . m.19 = males aged 19 or 20 years.

However, contrary to expectation, this relationship was not found among girls alone. The effect was significant, albeit rather small, in both groups. It is interesting that the direction of this effect was contrary to self-discrepancy theory's prediction: smaller feminine discrepancies were associated with more dieting. To recapitulate, self-discrepancy theory conceptualizes actual-ideal discrepancies as a form of unfulfilled positive potential that has negative consequences for the individual. The present finding supports the idea that achieving greater matches between the actual and the ideal self can have negative effects as well. A self-perception of coming close to one's personal ideal in terms of feminine qualities was related to more dieting. This finding corresponds to the idea that dieting functions as a social indicator of femininity. It also is

congruent with impression management theory's basic assumption that people may engage in behaviors (such as dieting) that project what they believe about themselves (being very feminine) without necessarily being aware of this process (Mori et al., 1987).

The limitations of previous studies in terms of sample size, sample selectivity, and extreme group comparison (bulimics vs. nonbulimics) were considered in the present design by using more representative samples. Relationships between the variables of interest were tested with bulimic eating behavior measured as a continuous rather than a dichotomous variable. Although the results of this study appear to confirm the research hypotheses, some methodological problems need to be addressed. First, the sample was primarily middle class, and participation was

voluntary; therefore the generalizability may be limited. The volunteer rate of 59% among male high school students and 71% among females was satisfactory. Evaluating the extent to which nonresponse influenced the present results is difficult. It is likely that a number of students with bulimic symptoms chose not to participate or did not obtain parental permission to do so. Thereby, the range of variability may have been truncated, a constraint that afflicts research in this area in general.

Another important issue is the inevitable difficulty of self-report measures. Some underreporting of true bulimic behaviors is possible due to social desirability and loss of privacy in the classroom setting. It is possible that some of the difference between groups could be the result of response bias on the part of the two groups. Boys, for example, may have scored higher on more desirable and lower on less desirable items because of a tendency to project a more positive self-image and to downplay negative feelings. In addition, it is questionable whether the ability to introspect is as developed among adolescents as self-report measures assume. Also problematic is the use of EDI and ANIS subscales to measure bulimic eating behavior, because both scales were developed and validated in clinical populations. The fact that the pattern of findings regarding the importance of masculinity is consistent with previous findings in spite of these restrictions suggests that the findings may be valid.

All the methodological limitations of this study notwithstanding, an important contribution of this study to theories regarding the development of gender identity in adolescence is the finding of sex-specific age trends in gender-related self-discrepancies. Indeed the current findings may set the stage for understanding the sex-specific development of a variety of constructs such as general esteem, dieting, and bulimic eating behavior. For the average female, adolescent development appears to be associated with greater discrepancies between actual and ideal masculine traits. That pathological phenomena such as bulimic disorders are associated with actual-ideal discrepancies is an important addition to existing findings (Straumann et al., 1991) and supports the idea that typical developmental changes put women in the current historical/sociocultural context at risk (Steiner-Adair, 1990).

Theories on the role of gender identity conflict in disordered eating behavior make different assumptions about the locus of this conflict (internal vs. external). In Steiner-Adair's model, women who incorporate modern society's ideal of autonomy and in-

dividuation come into conflict with an enduring internal need to develop feminine-relational aspects of themselves (Steiner-Adair, 1990). From a constructivist standpoint, however, the "real" needs of women and men cannot be determined (Hare-Mustin & Marecek, 1988). A competing hypothesis is that gender identity conflict emerges in women who seek to achieve in traditionally masculine areas and experience external constraints that seem to be related to being female (e.g., Silverstein et al., 1990). In view of contemporary social forces, more women are expecting equal opportunities for autonomy and career achievement. At the same time, social sanctions continue to be imposed on females who exhibit characteristics considered desirable for males (Hurrelmann, 1991). The results of the present study highlight the role of stereotypes for the gender-specific development of identity and eating behavior. Over time, expectancy confirming processes may result in an increasing gap between actual and ideal masculine characteristics among women. Future researchers need to study the development and the consequences of gender identity constellations over the life span with longitudinal methods. Whether achieving greater matches between one's actual and ideal masculine attributes has long-term benefits for both sexes remains to be evaluated.

The results of this study refute the hypothesis that measuring up to culturally mandated, "gender-appropriate" norms is a source of psychological health for both sexes (e.g., Josephs, Markus, & Tafarodi, 1992). Congruence between sex and gender seems to be beneficial for males, not for females. For adolescent girls, the data supported Bem's proposition that psychological well-being is not associated with measuring up to traditional norms and values that define femininity. However, both the congruence hypothesis, which has a long tradition in psychology (Terman & Miles, 1936), and the more recent androgyny hypothesis (Bem, 1974) obscure power and value differences between feminine and masculine characteristics. In this study, greater matches between actual and ideal feminine attributes were associated with more dieting among both girls and boys, whereas greater matches between actual and ideal masculine attributes were associated with more general esteem. Thus, adolescents who are closer to their ideal self in terms of traits generally ascribed to men and further away in terms of traits generally ascribed to women appear to have a more positive sense of identity and to be more resilient as far as bulimic eating behavior is concerned.

To conclude, the higher risk of developing bulimic eating behavior among adolescent girls appears to be caused by increasing discrepancies between the actual and the ideal self-concept on masculine-typed personality traits in this age range. Interventions aimed at promoting “masculine” qualities and reducing pressure to conform to traditional expectations of femininity may be effective ways to prevent negative self-evaluation and disordered eating among girls. Interventions aimed at increasing the value of “feminine” qualities for both sexes and advancing their development, particularly among boys, also seem necessary. An awareness that developing and exercising desirable masculine traits is essential for the psychological well-being of women as well as men could contribute to the creation of a society that is characterized by more equal opportunities for self-actualization for both sexes.

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## REFERENCES

- Abdollahi, P., & Mann, T. (2001). Eating disorder symptoms and body image concerns in Iran: Comparisons between Iranian women in Iran and in America. *International Journal of Eating Disorders, 30*, 259–268.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Ashmore, R. D. (1990). Sex, gender, and the individual. In L. A. Pervin (Ed.), *Handbook of personality theory and research* (pp. 486–526). New York: Guilford Press.
- Auster, C. J., & Ohm, S. C. (2000). Masculinity and femininity in contemporary American society: A reevaluation using the Ben Sex-Role Inventory. *Sex Roles, 43*, 499–528.
- Bearden, W. O., Sharma, S., & Teel, J. E. (1982). Sample size effects on chi-square and other statistics used in evaluating causal models. *Journal of Marketing Research, 19*, 425–430.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*, 155–162.
- Bentler, P. M. (1980). Multivariate analysis with latent variables: Causal modeling. *Annual Review of Psychology, 31*, 419–456.
- Bentler, P. M. (1989). *EQS. Structural Equations Program Manual. Version 3.0*. Los Angeles: BMDP Statistical Software.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 588–606.
- Bentler, P. M., & Weeks, D. G. (1980). Linear structural equations with latent variables. *Psychometrika, 45*, 289–308.
- Blundell, J. E., & Hill, A. J. (1993). Binge eating: Psychobiological mechanisms. In C. G. Fairburn & G. T. Wilson (Eds.), *Binge eating* (pp. 206–224). New York: Guilford Press.
- Bock, B. C., & Kanarek, R. B. (1995). Women and men are what they eat: The effects of gender and reported meal size on perceived characteristics. *Sex Roles, 33*, 109–119.
- Boomsma, A. (1982). The robustness of LISREL against small sample sizes in factor analysis models. In K. G. Jöreskog & H. Wald (Eds.), *Systems under indirect observations* (pp. 149–195). Amsterdam: North-Holland.
- Boskind-Lodahl, M. (1976). Cinderella's stepsisters: A feminist perspective on anorexia nervosa and bulimia. *Signs, 2*, 342–356.
- Broverman, I. K., Broverman, D. M., Clarkson, F. E., Rosenkrantz, P. S., & Vogel, S. R. (1972). Sex stereotypes: A current appraisal. *Journal of Social Issues, 28*, 59–78.
- Broverman, I. K., Vogel, S. R., Broverman, D. M., Clarkson, F. E., & Rosenkrantz, P. S. (1970). Sex-role stereotypes and clinical judgments of mental health. *Journal of Consulting and Clinical Psychology, 34*, 1–7.
- Bruch, H. (1973). *Eating disorders*. New York: Basic Books.
- Cantelon, L., Leichner, P., & Harper, D. (1986). Sex-role conflict in women with eating disorders. *International Journal of Eating Disorders, 5*, 317–323.
- Cash, T. F., Ancis, J. R., & Strachan, M. D. (1997). Gender attitudes, feminist identity, and body images among college women. *Sex Roles, 36*, 433–447.
- Chaiken, S., & Pliner, P. (1987). Women, but not men, are what they eat: The effect of meal size and gender on perceived femininity and masculinity. *Personality and Social Psychology Bulletin, 13*, 166–176.
- Conway, M., Pizzamiglio, T., & Mount, L. (1996). Status, communality, and agency: Implications for stereotypes of gender and other groups. *Journal of Personality and Social Psychology, 71*, 25–38.
- Conway, M., & Vartanian, L. R. (2000). A status account of gender stereotypes: Beyond agency and communality. *Sex Roles, 43*, 181–199.
- Crandall, C. S. (1988). Social contagion of bulimia. *Journal of Personality and Social Psychology, 55*, 588–598.
- Dunn, P. K., & Ondercin, P. (1981). Personality variables related to compulsive eating in college women. *Journal of Clinical Psychology, 37*, 43–49.
- Fichter, M. M., & Keeser, W. (1980). Anorexia Nervosa Inventar zur Selbstbeurteilung (ANIS). *Archiv für Psychiatrie und Nervenkrankheiten, 228*, 67–89.
- Garner, D. M., Olmsted, M. P., & Polivy, J. (1983). Development and validation of a multidimensional Eating Disorders Inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2*, 15–35.
- Grimmell, D., & Stern, G. S. (1992). The relationship between gender role ideals and psychological well-being. *Sex Roles, 27*, 487–497.
- Habermas, T. (1990). Die geschlechtstypischen Real- und Idealselbstbilder von bulimischen Patientinnen und Nicht-Patientinnen [Sex-typed actual and ideal self images of bulimic patients and non patients]. *Zeitschrift für Klinische Psychologie, 19*, 50–60.
- Hare-Mustin, R. T., & Maracek, J. (1988). The meaning of difference. Gender theory, postmodernism, and psychology. *American Psychologist, 43*, 455–464.
- Hart, K., & Kenny, M. E. (1997). Adherence to the super women ideal and eating disorder symptoms among college women. *Sex Roles, 36*, 461–478.
- Higgins, T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*, 319–340.
- Hörmann, H. J. (1986). Selbstbeschreibungsforschung SDQ-III-G [Self-description questionnaire SDQ-III-G]. In R. Schwarzer (Ed.), *Skalen zur Befindlichkeit und Persönlichkeit. Forschungsbericht 5* (pp. 47–83). Berlin, Germany: Freie Universität.

- Hurrelmann, K. (1991). Junge Frauen: Sensibler und selbstkritischer als junge Männer [Young women: More sensitive and self-critical than young men]. *Pädagogik*, 7/8, 59–62.
- Jöreskog, K. G. (1977). Structural equation models in the social sciences: Specification, estimation and testing. In P. R. Krishnaiah (Ed.), *Applications of statistics* (pp. 265–287). Amsterdam: North-Holland.
- Jöreskog, K. G. (1978). Structural analysis of covariance and correlation matrices. *Psychometrika*, 43, 443–477.
- Josephs, R. A., Markus, H., & Tafarodi, R. W. (1992). Gender and self-esteem. *Journal of Personality and Social Psychology*, 63, 391–402.
- Kandel, D. B., & Davies, M. (1982). Epidemiology of depressive mood in adolescents. *Archives of General Psychiatry*, 39, 1205–1212.
- Klingenspor, B. (1987). Selbstwahrnehmung von Geschlechterrollenidentifikation, Selbstwertgefühl und Körperbild bei Bulimarexia [Self-perceived sex-role identity, self-esteem, and body image in bulimarexia]. *Verhaltensmodifikation und Verhaltensmedizin*, 8, 273–296.
- Klingenspor, B. (1994a). Geschlecht, soziale Identität und bulimisches Eßverhalten [Sex, gender, and bulimia]. *Zeitschrift für Sozialpsychologie*, 25, 108–125.
- Klingenspor, B. (1994b). Gender identity and bulimic eating behavior. *Sex Roles*, 31, 407–431.
- Klingenspor, B., & Stetsenko, A. (1994, August). *Gender identity and bulimic eating behavior: A comparison of German and Russian students*. Paper presented at the European Conference on Psychosomatic Research, Gent, Belgium.
- Köhler, H. (1992). Bildungsbeteiligung und Sozialstruktur in der Bundesrepublik [Educational participation and social structure in Germany]. *Studien und Berichte*, 53.
- Lancelot, C., & Kaslow, N. J. (1994). Sex-role orientation and disordered eating in women: A review. *Clinical Psychological Review*, 14, 139–157.
- LaVaque-Manty, M. (2001). Food, functioning and justice: From famines to eating disorders. *Journal of Political Philosophy*, 9, 150–167.
- Lenton, A. P., Blair, I. V., & Hastie, R. (2001). Illusions of gender: Stereotypes evoke false memories. *Journal of Experimental and Social Psychology*, 37, 3–14.
- Lewis, D. L., & Johnson, C. (1985). A comparison of sex role orientation between women with bulimia and normal controls. *International Journal of Eating Disorders*, 4, 247–257.
- Lippa, R. A., & Tan, F. D. (2001). Does culture moderate the relationship between sexual orientation and gender-related personality traits? *Cross-Cultural Research*, 35, 65–87.
- Little, T. D., Das, J. P., Carlson, J. S., & Yachimowicz, D. J. (1993). The role of higher-order cognitive abilities as mediators of deficits in academic performance. *Learning and Individual Differences*, 5, 219–240.
- Marsh, H. W., Balla, J. R., & McDonald, R. P. (1988). Goodness-of-fit indexes in confirmatory factor analysis: The effect of sample size. *Psychological Bulletin*, 103, 391–410.
- Marsh, H. W., & O'Neill, R. (1984). Self-Description Questionnaire III (SDQ III): The construct validity of multidimensional self-concept ratings by late-adolescents. *Journal of Educational Measurement*, 21, 153–174.
- McArdle, J. J., & McDonald, R. P. (1984). Some algebraic properties of the reticular action model for moment structures. *British Journal of Mathematical and Statistical Psychology*, 37, 234–251.
- McNeill, S., & Petersen, A. (1985). Gender role and identity in early adolescence: Reconsideration of theory. *Academic Psychology Bulletin*, 7, 299–315.
- Mooney, K. M., & Lorenz, E. (1997). The effects of food and gender on interpersonal perceptions. *Sex Roles*, 36, 639–654.
- Mori, D., Chaiken, S., & Pliner, P. (1987). "Eating lightly" and the self-presentation of femininity. *Journal of Personality and Social Psychology*, 53, 693–702.
- Newman, L. S., Higgins, E. T., & Vookles, J. (1992). Self-guide strength and emotional vulnerability: Birth order as a moderator of self-affect relations. *Personality and Social Psychology Bulletin*, 18, 402–411.
- Paxton, S. J., & Sculthorpe, A. (1991). Disordered eating and sex role characteristics in young women: Implications for socio-cultural theories of disturbed eating. *Sex Roles*, 24, 587–598.
- Pedhazur, E. J., & Tetenbaum, T. J. (1979). The Bem Sex Role Inventory: A theoretical and methodological critique. *Journal of Personality and Social Psychology*, 37, 996–1016.
- Petersen, A. C., Sarigiani, P., & Kennedy, R. E. (1991). Adolescent depression: Why more girls? *Journal of Youth and Adolescence*, 20, 247–271.
- Pliner, P., & Chaiken, S. (1990). Eating, social motives, and self-presentation in women and men. *Journal of Experimental Social Psychology*, 26, 240–254.
- Pliner, P., Chaiken, S., & Flett, G. L. (1990). Gender differences in concern with body weight and physical appearance over the life span. *Personality and Social Psychology Bulletin*, 16, 263–273.
- Polivy, J., & Herman, C. P. (1985). Dieting and bingeing: A causal analysis. *American Psychologist*, 40, 193–201.
- Polivy, J., & Herman, C. P. (1987). Diagnosis and treatment of normal eating. *Journal of Consulting and Clinical Psychology*, 55, 635–644.
- Rodin, J., Silberstein, L. R., & Striegel-Moore, R. (1985). Women and weight: A normative discontent. In T. B. Sonderegger (Ed.), *Psychology and gender* (pp. 267–307). Lincoln: University of Nebraska Press.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Schlenker, B. R. (1986). Self-identification: Toward an integration of the private and the public self. In R. Baumeister (Ed.), *Public self and private self* (pp. 21–62). New York: Springer.
- Schneider-Düker, M., & Köhler, A. (1988). Die Erfassung von Geschlechtsrollen. Ergebnisse zur deutschen Neukonstruktion des Bem Sex-Role Inventory [The measurement of sex roles. Results of the German reconstruction of the Bem Sex-Role Inventory]. *Diagnostica*, 34, 256–270.
- Siever, M. D. (1994). Sexual orientation and gender as factors in socioculturally acquired vulnerability to body dissatisfaction and eating disorders. *Journal of Consulting and Clinical Psychology*, 62, 252–260.
- Silverstein, B., Carpman, S., Perlick, D., & Perdue, L. (1990). Non-traditional sex role aspirations, gender identity conflict, and disordered eating among college women. *Sex Roles*, 23, 687–695.
- Soundy, T. J., Lucas, A. R., Suman, V. J., & Melton, L. J. (1995). Bulimia-nervosa in Rochester, Minnesota from 1980 to 1990. *Psychological Medicine*, 25, 1065–1071.
- Steel, R. G. D., & Torrie, J. H. (1980). *Principles and procedures of statistics* (2nd ed.). New York: McGraw-Hill.
- Steiner-Adair, C. (1990). The body politic. Normal female adolescent development and the development of eating disorders. In C. Gilligan, N. P. Lyons, & T. J. Hanmer (Eds.), *Making connections* (pp. 162–182). Cambridge, MA: Harvard University Press.
- Strauman, T. J., Vookles, J., Berenstein, V., Chaiken, S., & Higgins, E. T. (1991). Self-discrepancies and vulnerability to body dissatisfaction and disordered eating. *Journal of Personality and Social Psychology*, 61, 946–956.
- Striegel-Moore, R. H. (1993). Etiology of binge eating: A developmental perspective. In C. G. Fairburn & G. T. Wilson (Eds.), *Binge eating* (pp. 144–172). New York: Guilford Press.
- Streigel-Moore, R. H., Silberstein, L. R., & Rodin, J. (1986). Toward an understanding of risk factors of bulimia. *American Psychologist*, 41, 246–263.

- Tabachnik, B. G., & Fidell, L. S. (1989). *Using multivariate statistics*. New York: Harper & Row.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago: Nelson-Hall.
- Terman, L. M., & Miles, C. C. (1936). *Sex and personality*. New York: McGraw-Hill.
- Thomas, K., Ricciardelli, L. A., & Williams, R. J. (2000). Gender traits and self-concept as indicators of problem eating and body dissatisfaction among children. *Sex Roles, 43*, 441–458.
- Tobin-Richards, M. H., Boxer, A. M., & Petersen, A. C. (1983). The psychological significance of pubertal change. Sex differences in perceptions of self during early adolescence. In J. Brooks-Gunn & A. C. Petersen (Eds.), *Girls at puberty* (pp. 127–154). New York: Plenum.
- Unger, R., & Crawford, M. (1992). *Women and gender: A feminist psychology*. New York: McGraw-Hill.
- Vartanian, L. R., Giant, C. L., & Passino, R. M. (2001). “Ally McBeal vs. Arnold Schwarzenegger”: Comparing mass media, interpersonal feedback and gender as predictors of satisfaction with body thinness and muscularity. *Social Behavior and Personality, 29*, 711–724.
- Williams, J. A. (1984). Gender and intergroup behavior: Towards an integration. *British Journal of Social Psychology, 23*, 311–316.
- Williams, J. E., & Best, D. L. (1990). *Measuring sex stereotypes: A multination study*. Newbury Park, CA: Sage.