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THE PROCESSING OF THIN IDEALS IN FASHION MAGAZINES: A SOURCE OF SOCIAL COMPARISON OR FANTASY?

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The present study aimed to investigate the role of processing in women's responses to thin idealized images of beauty. A sample of 144 women viewed magazine advertisements containing either thin ideal or product images. Instructional set was manipulated with three levels: control, social comparison, and fantasy instructions. It was found that exposure to thin ideal images led to increased negative mood and body dissatisfaction, while instructional set had its effect on positive mood and body dissatisfaction. For thin ideal images, social comparison instructions led to greater negative mood and body dissatisfaction, while fantasy instructions led to improved positive mood. Importantly, regression analyses indicated that both comparison processing (negatively) and fantasy processing (positively) were associated with women's response to thin ideal images. It was concluded that the nature of the processing women engage in is crucial to their response to thin ideal images.

Widespread dissatisfaction with body shape and weight among women has been well-documented. Current sociocultural theory (e.g., Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999) offers the most robust theoretical framework for understanding such dissatisfaction and accompanying disordered eating. This account contends that the contemporary thin beauty ideal for women is

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reinforced and transmitted by a number of social influences. Of these, the mass media are generally accepted as the most pervasive and powerful (Nemeroff, Stein, Diehl, & Smilack, 1994; Stice, 1994; Tiggemann, 2002). In particular, fashion and beauty magazines have been identified as a prime source and disseminator of the (impossibly) thin ideal for women (Malkin, Wornian, & Chrisler, 1999; Silverstein, Perdue, Peterson, & Kelly, 1986).

Extensive correlational evidence supports the link between exposure to fashion magazines and body dissatisfaction (Harrison & Cantor, 1997), drive for thinness (Tiggemann, 2005b) and eating disorder symptomatology (Harrison, 2000; Stice, Schupat-Neuberg, Shaw, & Stein, 1994; Stice & Shaw, 1994). But such correlational evidence cannot speak to the postulated *causal* role played by media images. Thus, in an attempt to determine causality, a number of investigators have experimentally manipulated exposure to thin idealized images and assessed their immediate impact. The meta-analysis by Groesz, Levine, and Murnen (2002) concluded that there was a small but relatively consistent negative effect of thin ideal images on mood, body dissatisfaction and self-perception of physical attractiveness. Since then, there has been a virtual explosion of such studies demonstrating negative effects of acute thin ideal media exposure.

In some experimental studies, however, negative effects have been limited to particular groups such as women with high levels of trait body dissatisfaction (Posavac, Posavac, & Posavac, 1998). More interestingly, a handful of studies have actually reported unexpected *positive* effects of media exposure to thin ideals among some subgroups (Henderson-King, & Henderson-King, 1997; Joshi, Herman, & Polivy, 2004; Mills, Polivy, Herman, & Tiggemann, 2002; Myers & Biocca, 1992; Wilcox & Laird, 2000). Although these results have been largely ignored by the field, they require explanation and suggest that the impact of the media is more complex than previously assumed. They also offer some clues toward a potential answer to the commonsense question raised by Polivy and Herman (2004): Why do women and girls continue to buy fashion magazines featuring thin models that make them feel anxious, depressed, and generally miserable about their bodies? In fact, fashion magazines are read by a large number of women and girls who apparently find them enjoyable (Thomsen, McCoy, Gustafson, & Williams, 2002).

Thus the straight-forward view that the media make women feel bad about themselves is probably too simple.

An important but relatively neglected question pointed out by Tiggemann (2005a) is *how* do media effects occur. As yet, little research has been directed specifically at the underlying psychological mechanisms that translate media content into body dissatisfaction. Experimentally, these can be investigated indirectly by manipulating instructions or the conditions under which media images are viewed, and directly by explicitly assessing the hypothesized process. We have argued previously that the actual processing that women engage in when viewing thin idealized media images is a crucial aspect (Tiggemann & McGill, 2004; Tiggemann & Slater, 2004).

So what do women actually do in response to any particular media image? The usually obtained negative effects of media exposure have generally been attributed to social comparison. When women compare themselves with the thin and beautiful images in the media, this almost invariably represents an upward social comparison in which they find themselves lacking, thus leading to negative mood and body dissatisfaction (Major, Testa, & Bylsma, 1991). This mechanism has largely been assumed to be operative by both researchers and the general public alike, but has rarely been tested. Nevertheless, specific instruction to compare with the images has been shown to produce more negative outcomes (Cattarin, Thompson, Thomas, & Williams, 2000; Halliwell & Dittmar, 2005), and explicit tests that have pitted schema activation against social comparison explanations have favored social comparison as the predominant mechanism (Birkeland et al., 2005; van den Berg & Thompson, 2007). More importantly, appearance comparison processing has been found to at least partially mediate the negative effect of thin ideal images on mood and body dissatisfaction (Bessenoff, 2006; Tiggemann & McGill, 2004; Tiggemann & Slater, 2004).

So how then might we explain positive effects? To explain their counterintuitive finding of self-enhancement after exposure to thin ideals, Myers and Biocca (1992) suggested the possibility of a "thinness fantasy" induced by media exposure. Instead of feeling worse about herself after seeing slim media images, a girl or woman may engage in a fantasy of believing herself to be thinner and more attractive. In a similar vein, Mills et al. (2002) suggested that media-portrayed thin bodies may encourage fantasy and provide inspira-

tion for women for whom weight and shape are personally relevant by presenting thinness as attainable. Other research (Evans, 2003; Engeln-Maddox, 2006) has indicated that women associate looking like the thin ideal media image with a wider array of psychological benefits and positive life outcomes, including confidence, happiness, romantic attention and generally having a "successful life." Thus positive outcomes in media experiments may be a function of viewing the media images with other motivations than social comparison, and consequently engaging in other forms of processing involving inspiration or fantasy.

Indeed, a few studies have begun to investigate naturalistic motivations for voluntary exposure to media images. In particular, evidence indicates that women and girls report buying fashion and beauty magazines for entertainment (Thomsen et al., 2002), for self-improvement and inspiration, for example, tips on style and grooming (Levine & Smolak, 1996; Thomsen et al., 2002), for social learning, that is, to learn how people behave (Tiggemann, 2005b), in addition to comparing themselves with the images (Tiggemann, Gardiner, & Slater, 2000). Interestingly, when Thomsen et al. (2002) asked women their reasons for reading beauty and fashion magazines, they found that the frequency of reading was most strongly correlated with the motivation for self-improvement.

We are aware of two studies conducted within a social comparison theoretical framework that have manipulated motive for social comparison. Martin and Gentry (1997) found instructing girls to view advertisements under a self-improvement motive (explicit comparison of physical attractiveness with the models to seek ways of improving own attractiveness) produced higher self-perceptions of physical attractiveness than self-evaluation instructions. Similarly, Halliwell and Dittmar (2005) showed that among women scoring high on internalization of sociocultural attitudes toward appearance, body-focused anxiety was significantly higher after viewing advertisements containing models than no models under self-evaluation instructions, but there was no difference under self-improvement instructions. Neither study demonstrated positive effects.

The aim of the present study was to further examine the underlying processes involved in women's responses to thin idealized media images with a view to gaining experimental control and disentangling inconsistencies in the previous literature. Form of processing was manipulated by instructional set and, in contrast to previous

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studies, was assessed. In particular, we wished to introduce fantasy processing, which was operationalized as imagining what it would be like to be the woman in the image. Thus this represents a broader concept that is not directly focused on self-attainment of thinness; nor does it require any explicit comparison. It was predicted that appearance comparison processing would result in more negative outcomes, while fantasy processing would result in more positive outcomes on mood and body satisfaction. To our knowledge, this represents the first experiment to deliberately attempt to obtain positive effects of media exposure to thin ideal images by invoking and assessing fantasy processing.

METHOD

DESIGN

The study employed a between-subjects 2 x 3 factorial design, investigating the effect of image type (thin ideal, product) and instructional set (control, social comparison, fantasy) on the dependent variables of state mood and body dissatisfaction (assessed before and immediately after viewing the images), as well as appearance self-esteem, comparison and fantasy processing (assessed after viewing the images).

PARTICIPANTS

The participants were 144 female undergraduate students at Flinders University in South Australia, aged between 18 and 35 years. They were recruited from psychology classes and received course credit for their participation. Students at Flinders University come from a variety of socioeconomic backgrounds, are primarily local, and predominantly (> 90%) Caucasian.

MATERIALS

Experimental Manipulation: Image Type. The two sets of stimulus materials (thin ideal, product) generated by Tiggemann and McGill

(2004) were used. Each set consisted of 15 magazine advertisements presented on A4 size laminated cards. The thin ideal set contained 11 advertisements showing most (at least $\frac{3}{4}$) of a typical ultra-thin female model's body and face (plus 4 product ads). The product set consisted of 15 advertisements showing products only. The stimuli had initially been selected from full-page color advertisements appearing in Australian women's magazines such as *She*, *Cosmopolitan*, and *Cleo*, and the two stimulus sets had been rated as equivalent on glossiness, colorfulness, attractiveness, general appeal and level of humour.

Experimental Manipulation: Instructional Set. Instructional set was manipulated to produce a control, social comparison, and fantasy viewing condition, each of which was received by one third of the participants. The control instructional set was designed to focus participants' attention on non-appearance related aspects of the images. The social comparison instructional set was designed to encourage participants to compare themselves with the images. The fantasy instructional set was designed to encourage participants to imagine what it would be like to be the woman in the image.

Instructional set was not manipulated by an explicit general instruction (Cattarin et al., 2000; Halliwell & Dittmar, 2005), but rather more subtly through a series of ratings as part of a so-called Consumer Response Questionnaire (Mills et al., 2002). As participants viewed each advertisement, they were asked to rate their level of agreement with a series of 6 statements (1 = "strongly disagree," 5 = "strongly agree"). Three statements were in common across the conditions: the extent to which participants thought the ad would catch their eye, how much they liked the lay-out, and how effective they thought the ad at promoting its product. In the control instructional set condition, the remaining questions (Items 3, 4 and 5) asked how funny, interesting, and creative participants found the ad. Under the social comparison instructional set, participants were asked their level of agreement with the three statements: "I would like my body to look like this woman's body"; "This woman is thinner than me"; and "In a busy clothes shop, I would not try on clothes in the same change-room as this woman." Under the fantasy instructional set, these statements were replaced by: "This woman has an exciting life"; "It would be great fun to be this woman"; and "I can imagine myself in this woman's place."

In order to make each of the instructional sets applicable to both image types (i.e., regardless of whether or not they featured women), participants were instructed: "If a person is shown in the ad, answer any relevant questions with reference to her. If there is no person shown in the ad, think about the type of person who would use the product advertised, and answer any relevant questions with reference to her."

Media Consumption. A general media consumption questionnaire asked about usual television, radio and magazine habits. More specifically, participants were then presented with a list of 17 popular Australian women's magazines and asked to tick each publication they had bought or looked at in the previous month, as well as to estimate the amount of time spent doing so. In addition to providing information on fashion and beauty magazine exposure, this measure was included to promote belief in the purported focus of the study on "magazine advertising targeted toward women."

State Mood and Body Dissatisfaction. Following Heinberg and Thompson (1995), eight visual analogue scales (VAS) were used to measure mood and body satisfaction both before and immediately after viewing the advertisements. Each scale consisted of a 10 cm horizontal line, with end-points labelled "none" and "very much." Participants were asked to indicate how they feel "right now" by placing a small mark on the line for the following dimensions: anxious, depressed, happy, angry, confident, fat, physically attractive, and satisfied with my body size and shape. The responses were scored to the nearest millimeter. Such visual analogue scales carry the advantage that they can be completed quickly and previous responses are difficult to recall, creating improved sensitivity to small changes. Heinberg and Thompson (1995) demonstrated that VAS are reliable measures of fluctuations in mood and body dissatisfaction.

A principal components analysis (followed by varimax rotation) revealed three clear factors (eigenvalues > 1). The first factor (eigenvalue = 2.82) accounted for 35.2% of the variance and contained three items encompassing positive mood: happy, confident and attractive (all loadings $> .65$). The second factor (eigenvalue = 1.57, 19.7% of the variance) tapped negative mood, containing items anxious, depressed and angry (factor loadings $> .65$). The final factor (eigenvalue = 1.19, 14.8% of the variance) addressed body dis-

satisfaction, containing the two items fat and (negatively) satisfied with body size and shape (factor loadings $> .85$). Accordingly, three measures were obtained by summing the relevant items for positive mood, negative mood, and body dissatisfaction.

State Appearance Self-Esteem. State appearance self-esteem was measured by the Appearance subscale of the State Self-Esteem Scale (Heatherton & Polivy, 1991). The scale was developed to be sensitive to temporary fluctuations in self-esteem, rather than as an index of stable and habitual levels of self-esteem that characterize the individual. Participants rate 20 statements as to their thoughts "at this moment" on a 5-point Likert scale (1 = "not at all," 5 = "extremely"). The Appearance subscale consists of 6 items (e.g., "I am pleased with my appearance right now"). Scores are summed to produce a measure ranging from 6 to 30. Heatherton and Polivy (1991) reported good reliability for the total scale. In the present sample, internal consistency for the Appearance subscale was similarly high ($\alpha = .87$).

Self-Reported Processing. Three items (corresponding to the three instructional set conditions) were constructed to assess the amount and nature of processing engaged in by participants. Using 7-point Likert scales, participants first rated the extent to which they thought about the features of the advertisement while viewing the ads (1 = "no thought," 7 = "a lot of thought"). The second item asked participants the extent to which they compared themselves with the woman in the advertisements (1 = "no comparison," 7 = "a lot of comparison"). The final item asked the extent to which participants imagined themselves being the woman (1 = "no imagination," 7 = "a lot of imagination"). Thus these items assessed, respectively, feature processing, comparison processing and fantasy processing.

PROCEDURE

Participants were recruited to participate in a study ostensibly investigating the effectiveness of advertising targeted toward women. Participants were randomly allocated to one of the six cells of the experimental design (subject to equal numbers in each condition) and completed the initial questionnaire measures of media consumption and VAS scales for state mood and body

dissatisfaction. Participants then viewed the 15 advertisements in the prescribed order and completed the accompanying Consumer Response Questionnaire. Following completion of the ratings for the advertisements, participants completed the postexposure VAS mood and body dissatisfaction measures, as well as state appearance self-esteem. After some filler tasks, participants were asked to recall the advertisements, in order to lend credence to the cover story that the study concerned the effectiveness of advertising. Finally, height and weight were measured. The research was approved by the Social and Behavioural Research Ethics Committee of Flinders University.

Statistical Analysis. In order to test the omnibus effect of image type (and instructional set) on mood, body dissatisfaction, and appearance self-esteem, a series of ANCOVAs was conducted, with the relevant pre-exposure measure as the covariate where appropriate.

The major analyses, however, focused specifically on the thin ideal images. Only these, in contrast to the product images, provided a model that women could compare with or imagine being. A set of nonorthogonal planned comparisons compared the three instructional sets on subsequent mood and body dissatisfaction, as well as on the processing engaged in while viewing the thin ideal images. These analyses were repeated controlling for age and BMI, which made little difference to the results. Accordingly, the results of the original analyses are presented here. Regression analyses were then conducted to assess the effect of the different forms of self-reported processing on mood and body dissatisfaction. Finally, potential predictors of different forms of processing were investigated by correlational analyses.

RESULTS

CHARACTERISTICS OF THE SAMPLE

Participants ranged in age from 18 to 35 years, with a mean age of 21.11 years ($SD = 4.06$). The majority (69.2%) were aged between 18 and 21 years, with 26.4% between 22 and 29 years, and 5.6% between 30 and 35 years, reflecting the general composition of the class. Their

mean Body Mass Index (BMI) was 23.74 ($SD = 5.44$), which falls within the "normal weight" range defined by Garrow and Webster (1985). According to current international cut-offs (World Health Organization, 1998), the majority (66.9%) were indeed normal weight ($18.5 < BMI < 24.9$), with 7.0% underweight ($BMI < 18.5$), 16.1% overweight ($25 < BMI < 29.9$) and 9.9% obese ($BMI > 30$). They reported buying an average of 0.57 ($SD = 0.83$) magazines in the previous month, but had read or looked through a further 2.65 ($SD = 1.90$) magazines, for an average approaching two hours ($M = 1.82$, $SD = 1.78$).

A series of one-way ANOVAs was conducted to check for the possibility of initial differences across the six experimental conditions. There were no significant group differences in age, $F(5,137) = 0.19$, $p > .05$, BMI, $F(5,136) = 0.22$, $p > .05$, number of magazines either bought, $F(5,137) = 1.77$, $p > .05$, or read in the previous month, $F(5,137) = 0.58$, $p > .05$, or time spent reading magazines, $F(5,134) = 1.65$, $p > .05$. Importantly, there were also no significant group differences on the pre-measures of positive mood, $F(5,138) = 0.81$, $p > .05$, negative mood, $F(5,138) = 0.62$, $p > .05$, and body dissatisfaction, $F(5,138) = 0.64$, $p > .05$.

OMNIBUS EFFECTS OF IMAGE TYPE AND INSTRUCTIONAL SET

For positive mood, the ANCOVA revealed a significant main effect of instructional set, $F(2,137) = 4.26$, $p < .05$. Neither the effect of image type ($F < 1$), nor the interaction, $F(2,137) = 1.05$, $p > .05$, approached significance. As can be seen from the adjusted means displayed in Table 1, the social comparison condition (adj $M = 44.57$) produced lower positive mood than the control (adj $M = 48.11$) and fantasy (adj $M = 50.39$) conditions.

For negative mood, in contrast, there was a significant main effect of image type, $F(1, 137) = 5.68$, $p < .05$, but not of instructional set, $F(2,137) < 1$. As can be seen from Table 1, women in the thin ideal condition expressed greater negative mood (adj $M = 13.15$) than those in the product condition (adj $M = 9.94$). The Image \times

TABLE 1. Adjusted Means (Standard Errors in Parentheses)
on Mood and Body Dissatisfaction

	Image Type	
	Thin Ideal	Product
Positive mood		
Control	46.7 (2.0)	49.6 (2.0)
Social comparison	44.7 (2.0)	44.4 (2.0)
Fantasy	51.9 (2.0)	48.9 (2.0)
Negative Mood		
Control	12.3 (1.7)	11.4 (1.6)
Social comparison	16.1 (1.6)	8.5 (1.7)
Fantasy	11.1 (1.6)	10.0 (1.6)
Body Dissatisfaction		
Control	48.7 (2.0)	44.1 (2.0)
Social comparison	54.3 (2.0)	48.5 (2.0)
Fantasy	49.8 (2.0)	48.4 (2.0)
Appearance Self-Esteem		
Control	18.7 (4.8)	17.7 (4.8)
Social comparison	17.9 (4.7)	16.9 (4.0)
Fantasy	18.8 (5.3)	18.3 (4.6)

Instruction interaction just failed to reach significance, $F(2,137) = 2.71, p = .07$.

For state body dissatisfaction, there was a main effect of image type, $F(1, 137) = 5.84, p < .05$, and of instructional set, $F(2,137) = 3.17, p < .05$, with no interaction between them, $F < 1$). The thin ideal condition (adj $M = 50.93$) produced more body dissatisfaction than the product condition (adj $M = 46.98$). The social comparison condition (adj $M = 51.39$) produced more body dissatisfaction than the control (adj $M = 46.42$) and fantasy (adj $M = 49.06$) conditions.

For state appearance self-esteem (only measured post), there was no significant main effect of image, $F(1, 138) = 1.13, p > .05$, or instruction ($F < 1$), or their interaction ($F < 1$).

In sum, positive mood was influenced only by instructional set, negative mood only by the nature of the image, and body dissatisfaction by both image type and instructional set. Appearance self-esteem was not influenced by either factor.

EFFECT OF INSTRUCTIONAL SET ON RESPONSE TO THIN IDEAL IMAGES

The planned comparisons for just the thin ideal images revealed that the fantasy condition elicited significantly more positive mood than did the control, $F(1, 45) = 5.11, p < .05$, and social comparison conditions, $F(1, 45) = 5.63, p < .05$, with no difference between the latter two. For negative mood, there was a statistically significant difference between social comparison and fantasy instructions, $F(1, 45) = 4.63, p < .05$. As can be seen in Table 1, the means for these fell on either side of the control condition (which did not differ significantly from either).

On body dissatisfaction, social comparison instructions produced higher scores than the control condition, $F(1, 45) = 4.64, p < .05$, but not the fantasy condition, $F(1, 45) = 2.08, p > .05$. The control and fantasy conditions did not differ. Finally, there were no significant effects of instructional set on state appearance self-esteem (all $t_s < 1$).

Thus, when considering the thin ideal images only, the planned comparisons showed that fantasy instructions led to more positive and less negative mood. Social comparison instructions led to greater negative mood and greater body dissatisfaction.

EFFECT OF INSTRUCTIONAL SET ON PROCESSING OF THIN IDEAL IMAGES

Table 2 displays the means for the processing variables for the thin ideal condition. For focusing on features, planned comparisons revealed a near significant difference between the control and the other two instructional set conditions, $t(69) = 1.96, p = .054$. For comparison processing, the social comparison condition produced more comparison processing than did the control condition, $t(69) = 2.29, p < .05$, but not the fantasy condition ($t < 1$). Finally, the fantasy instructional set condition clearly produced more fantasy processing than the other two conditions, $t(69) = 2.29, p < .05$.

The above results generally confirm the success of the experimental manipulation. Nevertheless, across conditions, comparison and

TABLE 2. Means for Processing of Thin Ideal Images

Instructional Set	Nature of Processing		
	Features	Comparison	Fantasy
Control	5.3 (1.1)	3.4 (2.1)	3.4 (1.8)
Social comparison	4.8 (1.2)	4.5 (1.7)	3.4 (1.6)
Fantasy	4.6 (1.0)	4.2 (1.5)	4.3 (1.1)

fantasy processing were positively correlated, $r = .36, p < .01$. Neither was correlated with feature processing ($r_s = .02, -.11, p > .05$).

EFFECT OF PROCESSING OF THIN IDEAL IMAGES ON MOOD AND BODY DISSATISFACTION

It was predicted that the process of engaging in comparison with thin ideals would lead to poorer mood and body dissatisfaction and, conversely, that the process of engaging in fantasy processing would lead to improved mood and body satisfaction. Regression analyses of the three forms of processing of thin ideals indicated significant prediction of all outcome variables. Table 3 provides the resulting regression coefficients (betas).

It can be seen that comparison processing was related to subsequent negative mood, body dissatisfaction, and lower positive mood and appearance self-esteem. Fantasy processing was related to improved positive mood and appearance self-esteem. Focusing on the features of the advertisement was unrelated to any outcome variable.

In order to investigate whether processing actually effected *change* in outcome, the above analyses were repeated, but including the relevant premeasure (Regression Equation 2). For appearance self-esteem (only measured post), pre body dissatisfaction was included in the analysis as the variable most highly correlated with appearance self-esteem. Under these conditions, comparison processing predicted an increase in negative mood and a decrease in appearance self-esteem. Fantasy processing predicted an increase in positive mood and in appearance self-esteem.

TABLE 3. Regression Coefficients (β) of the Prediction of Outcome Variables by Processing of Thin Ideal Images

Predictors	Positive Mood	Negative Mood	Body Dissatisfaction	Appearance Self-Esteem
Regression Equation 1				
Features	.18	-.06	-.17	.12
Comparison	-.29*	.35**	.37*	-.49**
Fantasy	.36**	-.09	-.23	.38**
Regression Equation 2				
Pre-variable	.80**	.74**	.88**	-.55**
Features	.00	-.01	-.07	.06
Comparison	-.13	.18*	.07	-.30**
Fantasy	.19**	-.07	-.05	.27**

Note. * $p < .05$. ** $p < .01$.

PREDICTORS OF NATURE OF PROCESSING OF THIN IDEAL IMAGES

In order to investigate potential predictors of forms of processing, the background variables of age, BMI, and number of magazines and time spent reading were correlated with the amount of comparison and fantasy processing of the thin ideal images. None of age ($r_s = -.13, -.05, p > .05$), BMI ($r_s = -.04, -.15, p > .05$), or time spent reading magazines ($r_s = .06, .09, p > .05$) was related to either form of processing. However, the number of magazines read in the past month was correlated with fantasy processing, $r = .21, p < .05$, but not comparison processing ($r = .05, p > .05$). It seems that women who read lots of magazines engaged in more fantasy processing.

DISCUSSION

The present study examined the effects of acute exposure to magazine images (advertisements) of thin models on women's mood, body dissatisfaction, and appearance self-esteem, with the explicit focus on the processing of such images. The first finding was that viewing thin ideal female images did lead to increased negative mood and body dissatisfaction. Thus the result adds to the

ever-growing body of evidence for “consistent” negative effects of exposure to thin ideals (Groesz et al., 2002).

Second, the study demonstrated effects of instructional set on positive mood and body dissatisfaction across image types. More importantly, for specifically the thin ideal images, social comparison instructions led to relatively greater negative mood and body dissatisfaction, while fantasy instructions led to greater positive mood. The negative effect of social comparison instructions replicates a few previous studies (Catterin et al., 2000; Halliwell & Dittmar, 2005; Tiggemann & McGill, 2004; Tiggemann & Slater, 2004), but the positive effect of fantasy instructions is a novel and exciting finding that awaits replication. More generally, the present findings confirm our earlier suggestion (Tiggemann & McGill, 2004) that, far from being an incidental aspect of the procedure, instructions may be just as crucial as image type in determining resulting mood and body dissatisfaction.

Unlike most previous studies, we also sought to examine by self-report the nature of women’s processing of the thin ideal images. Paralleling the results for instructional set, comparison processing was generally related to negative outcomes, in particular negative mood and body dissatisfaction, while fantasy processing was related to positive mood. Interestingly, both were moderately related to appearance self-esteem. In terms of predicting change, comparison processing predicted increased negative mood, fantasy processing predicted increased positive mood, and both predicted change (in opposite directions) in appearance self-esteem. These findings underscore the importance of processing, of how women actually respond to the media images. In particular, the present study represents the first attempt to conceptualize and measure fantasy processing. Future research might usefully develop stronger and more psychometrically valid measures of such processing.

To our knowledge, this is the first experiment to demonstrate both positive and negative main effects within the same protocol. As such, it carries a number of significant theoretical and methodological implications. Certainly it contributes to a more complex understanding of the role of the media in promoting women’s body dissatisfaction and eating concerns. Specifically, it allows us to gain experimental control over the phenomenon by manipulation of instructions or motivations, as well as some insight into the inconsistency in previ-

ous experimental research. Where experimental protocols have (deliberately or incidentally) encouraged social comparison processing (e.g., by asking women to rate the model's attractiveness and thinness, Champion & Furnham, 1999; Ogden & Munday, 1996), we would expect more negative outcomes than where such processing is not encouraged. Positive outcomes are more likely where instructions de-emphasize social comparison or when participants view the advertisements with other motivations.

One intriguing aspect of the present results is that, in the main, image type and instructional set did not have their effects on the same outcome variables. Similarly, social comparison and fantasy instructions and their accompanying processing affected different variables. Overall, fantasy instructions led participants to feel good in general (positive mood), but not about their body in particular (body dissatisfaction). Conversely, social comparison instructions led participants to feel bad about their bodies (body dissatisfaction), but did not lower their positive mood. This leads to the speculation that effects may be different for global measures of overall affect than for more specific body cognitions. In this way, it may even be possible to have positive *and* negative effects (on different measures) at the same time. We have other data (Tiggemann & Boundy, 2008) consistent with this disjunction between mood and body dissatisfaction, where particular experimental conditions (appearance compliments) elicited a decrease in negative mood but an *increase* in body shame. Bell, Lawton, and Dittmar (2007) similarly suggest that generalized mood effects are relatively independent of body dissatisfaction. Thus effects in the literature are likely to differ depending on the specificity of the dependent measures.

Our results, especially from the control condition that was designed to distract participants from focusing on the model, indicate that women do engage in a moderate amount of both comparison on the basis of appearance and fantasy processing (imagining being the woman). Although we initially conceptualized these as opposing motivations, there is no reason why women cannot do both. Here, the fantasy instructions elicited comparison processing as well as fantasy processing, suggesting perhaps that comparison processing predominates (consistent with the usually obtained negative effects). Further, fantasy and comparison processing were positively, not negatively, correlated. Wanke, Bless, and Igou (2001) have suggested more generally that assimilation and contrast are

parallel processes that can happen simultaneously and have additive (in opposite directions) effects. According to this logic, then, whether the outcome is positive, negative, or neutral will depend on the preponderance or proportion of the particular processing elicited, itself dependent on image type, instructions, and women's natural motivations and tendencies. Our results indicate that it will also vary as a function of specific dependent variable. Clearly future research needs to systematically investigate these propositions.

Putting together the present results with existing knowledge of motivations for reading fashion magazines (Levine & Smolak, 1996; Thomsen et al., 2002), we speculate that women and girls buy and read magazines for inspiration, self-improvement and pleasurable fantasy, and that this does make them feel positive in general, providing a plausible answer to the question raised by Polivy and Herman (2004). This speculation is supported by the finding that fantasy processing of the thin ideal images in the present experiment was correlated with the number of fashion magazines read in the previous month. However, women and girls also (deliberately or inadvertently) engage in social comparison, which makes them feel bad about their bodies in particular. In order to explain the large body of correlational evidence that links naturalistic media exposure to negative outcomes (Harrison, 2000; Harrison & Cantor, 1997; Stice, Schupat-Neuberg, Shaw, & Stein, 1994; Stice & Shaw, 1994; Tiggemann, 2005b), we further speculate that in the longer term, girls who find enjoyment and pleasure in beauty and fashion magazines may end up internalizing an increasingly unrealistic thin ideal for themselves and become at increased risk for body image and eating pathology (Mills et al., 2002). In this way, the immediate positive mood from viewing glossy and attractive media images reported by girls or demonstrated in the present experiment may serve to reinforce behaviors (buying and reading magazines) that are ultimately detrimental. Put simply, immediate temporary effects may differ from what is found in the long-term.

Like all studies, the present research findings need to be interpreted in the context of a number of limitations. First, the sample was restricted to young college-educated women and thus results may not generalize to older or other groups of women. Second, the study took place in a laboratory setting. Although the reading of fashion magazines is common everyday behavior, here we specifically instructed participants to pay attention to the advertisements

in a way that they may not do under "normal" viewing conditions, for example, when reading magazines at home or at the hairdressers. Nor was there any no-instructional-set control condition. Third, to avoid experimental confounding, the processing measures necessarily had to be asked retrospectively, at the end of the experiment. Relatedly, the processing measures were very simple, consisting of only single items. Thus we were unable to obtain detailed information on what the women actually did when processing an image. For example, we cannot distinguish whether participants were imagining what it would be like to be the model employed to make the ad, or like the woman depicted, with her accompanying imagined life (Engeln-Maddox, 2006; Evans, 2003). Future research could usefully develop more delineated and thorough measures assessing the nature of processing of media images.

Despite the above limitations, the present set of results raises some intriguing questions. More importantly, it makes a significant contribution as the first demonstration of positive and negative main effects of media exposure within the same experimental protocol and offers persuasive evidence as to the importance of the processing of thin ideal media images. Thus the present study helps us to achieve a more complex understanding of the role played by the mass media in the development of body dissatisfaction and disordered eating.

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