THE IMPACT OF THIN IDEAL IMAGES ON MOOD: WHAT ROLE DO

DEMAND CHARACTERISTICS PLAY?

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Abstract

Previous research has shown that female viewers generally experience detrimental effects following exposure to idealized media images. However, in experimental studies, demand characteristics – or cues that help the participant deduce the true purpose of the study – might influence the responses participants provide, particularly in studies involving idealized images. The present study investigated the potential role of demand characteristics following exposure to media images. Undergraduate female students (N = 172) were assigned to three groups (Implied Demand, Minimized Demand and Control), two of which were exposed to idealized media images in fashion magazines. Demand characteristics were manipulated when the experimenter provided the magazines during a break period, and participants' mood was assessed both pre- and post-exposure. Contrary to previous research, our results indicated that exposure to magazine images did not have consistently detrimental effects on the measures of participants' mood. Potential explanations for these results and future directions of research are discussed.

Keywords: media images, thin ideal, body image, demand characteristics

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CHAPTER I

Introduction

The past three decades have seen a surge in research investigating the effects of media images on female viewers. As of July 2016, a search for peer-reviewed articles in the Web of Science database using the key terms "media" and "body image" reveals 1,423 publications on this topic since 1986. Much of this research has focused on elucidating the generally detrimental effects that media exposure has on participants' mood, self-esteem, or appearance satisfaction. However, an issue that has had little attention devoted to it in body-image research is the phenomenon of demand characteristics. Recognized by Orne (1962), demand characteristics are the "totality of cues that convey an experimental hypothesis to the subject…" (p. 779). These cues may be problematic, as participants can use them to ascertain the study's true purpose and to change their behaviour to accord with this hypothesis (Mills, Polivy, Herman, & Tiggemann, 2002; Nichols & Maner, 2008; Orne, 1959b). Studies investigating effects of exposure to media images are particularly susceptible to demand characteristics, due to the measures utilized and the use of repeated measures designs. More specifically, the measures used often assess some component of body image and are usually presented both before and after exposure to media images. Participants might then realize that the study is investigating the effects of idealized images, infer that the presumed effects are detrimental, and so report worsened mood and/or lowered self-esteem or satisfaction with their own appearance after exposure.

The present study investigated the potential role of demand characteristics in an experimental design assessing participants' change in mood following exposure to thin-ideal images. Before discussing the study design, a review of the existing literature investigating the impact of media images on women's body image will be provided. First, the concept of body

image will be defined, followed by an overview of the literature investigating media images and their impact on body dissatisfaction. Finally, the role of social comparison theory in this field, as well as the potential impact of demand characteristics, will be discussed.

Body Dissatisfaction: Definition, Prevalence and Consequences

The overall construct of body-image has been hypothesized to be multidimensional (Banfield & McCabe, 2002). Four distinct components of attitudinal body-image have been proposed (Thompson & van den Berg, 2002): affective, cognitive, and behavioural components, as well as a global dissatisfaction with one's appearance. Affective aspects of body dissatisfaction encompass the negative emotions involved in evaluating one's body, such as anxiety and distress. The cognitive aspect refers to the thoughts and beliefs that are involved in evaluating one's appearance, whereas the behavioural component pertains to the strategies often employed in order to avoid feelings of body dissatisfaction. These strategies may include avoidance of situations or activities that may elicit feelings of dissatisfaction. Finally, a "subjective satisfaction" of one's overall appearance is also proposed as a separate construct, relating to the extent of global dissatisfaction with one's appearance (Thompson, 2004). Ultimately, body-image dissatisfaction is defined as "a person's negative thoughts or feelings about his or her body" (Grogan, 2008, p.4). However, research has mainly focused on the cognitive and affective aspects of body-dissatisfaction, with measures usually evaluating participants' emotions or cognitions regarding to their appearance (Thompson & van den Berg, 2002). Furthermore, it has been argued that behavioural manifestations of body-image dissatisfaction may actually be a product of the affective and cognitive components, rather than a unique aspect of body-image (Banfield & McCabe, 2002).

Previous research has demonstrated that women tend to exhibit greater levels of body-image dissatisfaction than their male counterparts. A study by Swami et al. (2010) reported the results of the International Body Project I (IBP-I). In a collaborative study including 58 scientists and scholars, they collected data from 4,019 women and 3,415 men in 26 countries. In addition to several other measures, the authors collected women's current and ideal body ratings based on the female Contour Drawing Figure Rating Scale (CDFRS) (Thompson & Gray, 1995); they then subtracted the ideal ratings from the current ratings in order to obtain a body dissatisfaction score. Overall, their findings revealed that women experience greater dissatisfaction with their appearance compared to men. Findings also differed across world regions, as "…women in South America and North America displayed more body dissatisfaction than women in Western Europe, Southeast Asia, Eastern Europe, Oceania, and South and West Asia…" (Swami et al., 2010, p. 317). The authors pointed out, however, that the differences in women's body dissatisfaction across world regions were small, with statistical significance being achieved only as a result of the large sample size.

The consequences of body-image dissatisfaction vary depending on personal characteristics such as the extent to which one internalizes the thin-ideal (Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2004). As described by Ahern, Bennett and Hetherington (2008),"thin ideal internalization is the extent to which an individual 'buys into' socially defined ideals of attractiveness and engages in behaviors designed to approximate these ideals" (p. 295). Because of this, the effects of body-image dissatisfaction may range anywhere from a minor annoyance to a contributor to the development of an eating disorder. However, generally speaking, dissatisfaction with one's appearance has been associated with anxiety, depression, lowered levels of self-esteem, and increased negative affect (Kostanski & Gullone, 1998). As

suggested by Swami et al. (2010), experimental studies have demonstrated that one contributor to an individual's level of appearance dissatisfaction is exposure to media images (Grabe, Ward, & Hyde, 2008; Myers & Biocca, 1992).

Media Images and Appearance Dissatisfaction

Media images have often been implicated in contributing to body-image dissatisfaction and eating disturbance (Grabe et al., 2008). Several content analyses have investigated the prevalence of the slender physique, known as the thin-ideal in media images, as well as differences in the marketing of this ideal towards men and women. A close inspection of media depictions of women demonstrates the salience of exceedingly thin and attractive females across a multitude of media platforms (Bonafini & Pozzilli, 2011; Byrd-Bredbenner, Murray, & Schlussel, 2005; Fouts & Burggraf, 1999; Fouts & Burggraf, 2000; Seifert, 2005; Signorielli, McLeod, & Healey, 1994; Sypeck, Gray, & Ahrens, 2004). Spitzer, Henderson and Vivian (1999) and Wiseman, Gray, Mosimann, and Ahrens (1992) identified a substantial weight decrease in the depiction of the thin ideal for females in the past four decades, resulting in an extremely thin ideal in western, socioeconomically developed societies (Cash & Pruzinsky, 2002). This trend is mirrored by an increase in the number of weight-loss promoting advertisements and articles (Wiseman et al., 1992). These diet-promoting advertisements are far more prevalent in women's magazines than men's (Andersen & Didomenico, 1992). In addition, the representations of the ideal physique have been deemed to be much more pervasive and rigid for women than for their male counterparts (Buote, Wilson, Strahan, Gazzola, & Papps, 2011). That said, within women's magazines, differential emphasis of the thin-ideal exists, where fashion magazines often portray leaner models than fitness magazines (Wassylkiw, Emms, Meuse, & Poirier, 2009). Stereotypical messages pertaining to thin-ideal images have also been

investigated in popular children's videos, where it has been determined that more positive traits are often associated with thinner, more attractive characters (Herbozo, Tantleff-Dunn, Gokee-Larose, & Thompson, 2010).

Previous research has almost invariably demonstrated that these representations in the mass media play a role in the development of appearance dissatisfaction among female viewers (Groesz, Levine, & Murnen, 2001). A causal effect on female viewers' appearance dissatisfaction has been identified after viewing thin females in a variety of media outlets, including television commercials (Heinberg & Thompson, 1995), fashion magazines (Turner, Hamilton, Jacobs, Angwood & Dwyer, 1997) and music videos (Prichard & Tiggemann, 2012). In addition, exposure to thin-ideal media images results in increased depression and anger, as well as decreased self-esteem and positive affect (Hausenblas, Campbell, Menzel, Doughty, Levine, & Thompson, 2013), oftentimes resulting in decreased levels of confidence in women (Stice & Shaw, 1994). In a meta-analysis, Grabe, Ward and Hyde (2008) reviewed 77 studies, including both experimental and correlational designs, in order to ascertain the impact that exposure to media images has on women's body dissatisfaction and related issues. Their findings established that, overall, exposure to thin-ideal images resulted in decreased levels of body satisfaction and greater levels of eating disorder symptomology. This was corroborated in a meta-analysis by Want (2009) where it was confirmed that exposure to media portrayals of the thin-ideal results in a small-to-medium size adverse effect on female viewers' appearance satisfaction. Furthermore, the Want (2009) meta-analysis also revealed that pre-existing appearance concerns moderate the relationship between viewing thin-ideal images and one's level of appearance satisfaction. Ultimately, these findings suggest that exposure to these images

has detrimental consequences for female viewers, especially those that are already concerned about their appearance.

A typical study design used to investigate the relationship between thin ideal exposure and body dissatisfaction is demonstrated in the laboratory experiment by Roberts and Good (2010). The study aimed to determine the role of the Five-Factor personality traits (neuroticism, conscientiousness, openness to experience, extroversion, and agreeableness) as potential moderators between viewing images of the thin ideal and the extent to which feelings of dissatisfaction arise. In order to conceal the true purpose of the study, it was presented as one investigating consumer preferences. Participants first completed the NEO-PI-R to assess their personality, followed by the Eating Disorder Inventory (EDI) which among other things contains an assessment of body image dissatisfaction. Participants were then either presented with images of thin or "plus-size" models, depending on the group they had been randomly assigned to. In order to bolster their cover story, participants were asked to provide ratings of the clothing worn by the models using a Consumer Preferences Questionnaire. Following this exposure, participants were provided with a final measure to complete, the Body Esteem Scale for Adolescents and Adults. This study provides an illustrative example of the typical paradigm utilized in investigating the effects of exposure to media images of the thin-ideal. Although the measures employed and the type of media images presented may vary, studies often consist of a pre-and post-measure pertaining to body-dissatisfaction or a related construct, with an intervening manipulation of exposure to thin ideal images, as well as instructions to pay special attention to the images, or to rate them in some way (Want, 2014).

Social Comparison Theory as a Proposed Mechanism

Social comparison theory has often been proposed as the explanatory mechanism for the relationship between viewing images of the thin ideal and feeling dissatisfied with one's body (e.g., Richins, 1991; Tiggemann, & Polivy, 2010). This model, proposed by Festinger (1954), states that individuals are inherently driven to evaluate themselves, and often engage in comparisons with others in order to ascertain their own personal worth. Festinger's (1954) model primarily addresses comparisons that are actively sought, in which individuals compare themselves based on a particular dimension of the self. As a result, there are potentially endless comparisons that can be made with different people, based on the varying dimensions that one seeks evaluation of. Furthermore, these comparisons can broadly be defined as either upward or downward in nature; upward comparisons are conducted with individuals who are superior to one's self on the dimension being compared, whereas downward comparisons are conducted with those inferior to the self.

Extensive research has been conducted in order to identify various aspects of the social comparison process, including with whom people engage in social comparisons, whether these comparisons are upward or downward in nature and the implications of these comparisons for an individual's self-perception. Although there isn't a general consensus as to when or why individuals engage in upward versus downward comparisons, the general application of social comparison theory to media images proposes that upward comparisons are much more common (Corcoran, Crusius, & Mussweiler, 2011). This is due to the fact that media images often present exceptionally thin and attractive females, resulting in figures with seemingly better physical attributes than the viewers. As a result, extremely high, and often unrealistic standards of perfection, beauty, and thinness become the point of comparison for viewers. There is some

evidence to suggest that upward comparisons can result in an enhancement of self-assessments (Lockwood & Kunda, 1997) as well as increased motivation for self-improvement (Collins, 1996). In regards to media images depicting the thin ideal, however, most researchers have posited and found that comparisons with these extreme comparison standards result in negative self-evaluations. Consequently, exposure to these images often evokes feelings of body dissatisfaction in females (Tiggemann & McGill, 2004; Tiggemann & Polivy, 2010) and associated effects such as decreased self-esteem (Irving, 1990) and greater negative affect (Cattarin, Thompson, Thomas, & Williams, 2000). Upward comparisons are also more likely to be made by women with eating disorder symptoms (Corning, Krumm, & Smitham, 2006).

The issue of choice has often been questioned in relation to engaging in comparisons or not. Indeed, Goethals (1986) proposed that when it comes to media images, individuals may actually be forced to engage in comparisons. Furthermore, he proposed that individuals may not even be aware of the comparisons they make. Ultimately, the concept of unsought or forced comparisons is especially alarming when one takes into account the amount, variety, and nature of media images that an individual is exposed to on a daily basis.

Demand Characteristics

An issue that remains under-explored in the realm of body-image research is the phenomenon of demand characteristics. Orne recognized that participants in psychology experiments would be inclined to play the role of a "good subject" (p. 778) by aiming to identify the true purpose of the study and behaving in a manner that would support it. He proposed that participants attempt to identify the true hypothesis by reacting to cues in the experimental setting. These cues were then collectively labelled the "demand characteristics of the experimental situation" (Orne, 1962, p. 779). In psychology experiments, cover stories are often

implemented in order to disguise the purpose of the study and obtain unbiased responses from participants. However, the presence of significant cues as to the purpose of the study (i.e. demand characteristics) in the methodology may enable participants to identify the study's purpose and change their behaviour to accord with that purpose, undermining the cover story and the external validity of the results. As a result, the impact that demand characteristics have on the ecological validity of all research findings and the conclusions that we draw from them is potentially substantial. Furthermore, although demand characteristics are perceived as being inherent to experimental settings, very little empirical research has been conducted to determine their influence on participant behaviour (Nichols & Maner, 2008). While not assessing the effects of media images on women, Nichols and Maner (2008) investigated the general impact of demand characteristics. In their experiment, they had a confederate inform participants of the study's hypothesis before they began the laboratory task. Their results confirmed that participants behaved in a manner that confirmed the study hypothesis if they became aware of it, indicating that the impact of demand characteristics can be potentially substantial if participants are able to discern the true hypothesis.

As outlined by Want (2014), the issue of demand characteristics is particularly pertinent to studies investigating media effects on body image for several reasons. Firstly, studies exploring the effects of media images often utilize a repeated-measures design, where participants initially complete an assessment of their body image attitudes or feelings, are exposed to the manipulation and, subsequently, complete the same or similar body image assessment once again. The manipulation often involves viewing several images of models on a computer screen, and so it is very likely that participants will identify that the true purpose of the experiment has to do with the impact of those models on their body image. This issue is

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excellently summarized by Orne (1962, p. 779), who stated: "If a test is given twice with some intervening treatment, even the dullest college student is aware that some change is expected, particularly if the test is in some obvious way related to the treatment".

A second issue that may result in excessive demand characteristics pertains to the manipulation itself. Oftentimes, the images presented to participants have been removed from their natural context, such as in a magazine, and any accompanying text or logos have been edited out. Furthermore, more recent studies often present these images in a slide-show presentation manner, where participants view them on a computer screen. Frequently, participants are also specifically instructed to pay special attention to the images being presented, and even asked to rate their attractiveness. This highly salient presentation could be problematic, as it may provide an indication of the study's true purpose to participants.

A third issue pertains to the cover stories utilized in experiments. A study by Mills, Polivy, Herman and Tiggemann (2002) sought to determine what type of cover story would be most effective in minimizing demand characteristics. They proposed that the typical repeated-measures design often utilized in assessing body image dissatisfaction creates demand characteristics, even if a cover story is employed in an attempt to mask the true purpose of the study. As a result, they investigated the use of a "two-story" design in order to determine whether it is more effective at reducing demand characteristics. In comparison to a "one-story" design, where participants know that all the measures they complete are for a single study, a two-story design involves an additional layer of deception, where participants are told that the dependent measures that they are asked to complete are for a different study. Mills et al. (2002) reasoned that if the participant believes that the manipulation and the dependent measures are unrelated, then participants would not have the expectation that the measure ratings should be

affected by the manipulation. In their experiment, Mills et al. (2002) presented female participants with laminated magazine ads that contained images of either thin models or neutral products. In what is referred to as the "minimized" demand group, Mills et al. (2002) utilized a two-story cover story, where participants were asked to complete a mood questionnaire after exposure to the images but as part of what they were told was aggregate data for another research project. Participants in the implied demand group were asked to complete the mood questionnaire following the exposure to the ads and were not told it was for a separate study.

The results revealed that participants in the implied demand group reported an increase in negative mood after viewing the images of thin models compared to the neutral products. In contrast, participants in the minimized demand group did not report a significant change in their self-ratings of mood after viewing images of the thin-ideal and neutral products. Ultimately, these results suggest that participants in studies that expose them to thin-ideal images may be able to discern that the study hypothesis concerns the detrimental effects of that exposure and will respond to self-report measures in accordance with that hypothesis. They also suggest that more elaborate, two-story cover stories reduce demand characteristics. However, as identified by Want (2014), in a meta-analysis of 72 studies investigating the effects of media images, over a third did not use a cover story or directly told the participants the purpose of the experiment; only 10% of the studies actually utilized two-story cover stories, which Mills et al. (2002) deemed effective at reducing demand characteristics.

The Present Study

In the current study we attempted to elucidate the potential impact of demand characteristics by manipulating the level of demand cues participants were exposed to. Previous studies have often assessed body dissatisfaction using a variety of measures, such as the Body

Dissatisfaction subscale of the Eating Disorder Inventory (EDI-2; Garner, 1991) or visual analogue scales (Heinberg & Thompson, 1995) assessing satisfaction with one's weight, body or overall appearance. However, the use of these standardized measures may result in increased demand characteristics, as participants undoubtedly realize that the questions pertain to their body image or related issues. Therefore, it is likely that participants may assume that the study hypothesis pertains to body image as well, especially if a repeated-measures design is employed. As a result, measures pertaining to body image satisfaction were not utilized in the current study; instead, both implicit and explicit mood measures were employed in a pre- to post-test design in order to investigate the effects of thin ideal images on participants' mood. Due to the structure of the implicit mood measure (Hass, Katz, Rizzo, Bailey, & Moore, 1992), it was possible to present the measure to participants as one assessing subliminal information processing. We reasoned that if participants were able to identify that the purpose of the study was about how exposure to media images affected their mood, their responses on the explicit mood measure may have been impacted. However, participants would be unlikely to change their responses on the implicit mood measure, as it was presented as a measure of their subliminal information processing capabilities, not of their mood.

Furthermore, in order to attempt a more ecologically valid presentation of the thin ideal, complete and unedited fashion magazines were utilized (rather than just images extracted from such magazines). Three conditions were tested. In one condition (Minimized Demand) exposure to the magazines appeared incidental to the study design, as participants were provided with the magazines during a ten-minute "break" from the study. In a second condition (Implied Demand), participants were also given the fashion magazines but were instructed to pay special attention to the images because we were interested in the effects of the images on their mood and

performance on the supposed subliminal information processing task. Potential demand characteristics in previous studies have often been attributed to experimenters' instructions pertaining to thin ideal images, such as asking participants to rate the attractiveness of the models or to pay special attention to the images. In the final condition (Control), participants were asked to read different magazines, with no thin-ideal imagery in them.

Due to the exploratory nature of this experiment, two sets of hypotheses were proposed. If demand characteristics do influence participants' responses, then differing sets of results are expected between the two Demand conditions (Minimized vs. Implied). If participants expect to experience detrimental effects after viewing idealized images, then it is proposed that participants exposed to greater demand characteristics (Implied Condition) will provide responses indicating increased explicit negative affect and lowered explicit positive affect from before to after exposure. Therefore, this resulted in the following set of hypotheses:

> Hypothesis 1a: From pre to post-test, there will be a greater increase in negative affect and a greater decrease in positive affect for participants in the Implied Demand group, compared to the Minimized Demand and Control groups.

In addition, if participants' responses to media images are influenced by demand characteristics, we reasoned that there would be no difference from pre- to post-test in levels of implicit mood in any condition. This is because we reasoned that participants might alter their responses to explicit measures of mood based on demand, but that they would be unlikely to do so on an implicit measure of mood, due to the fact that it is disguised as a measure of subliminal information processing.

> Hypothesis 1b: There will be no difference in the change in positive or negative implicit mood from pre- to post-test between the three conditions.

Alternatively, if demand characteristics do not influence participants' responses, it is predicted that similar responses to explicit and implicit measures of negative and positive affect

will be obtained between the two Demand conditions. In other words, if media images exert

detrimental effects on viewers that are not attributable to demand characteristics, it was expected

that levels of negative affect would be higher and levels of positive affect would be lower for

participants exposed to idealized media images, whether or not they were in the Implied or

Minimized Demand condition, and on both explicit and implicit measures of mood:

> Hypothesis 2a: From pre- to post-test, there will be similar increases in negative affect and decreases in positive affect on the explicit mood measure in the two Demand conditions. Both these changes will be significantly greater than changes in the Control condition.

> Hypothesis 2a: From pre- to post-test, there will be similar increases in negative affect and decreases in positive affect on the implicit mood measure in the two Demand conditions. Both these changes will be significantly greater than changes in the Control condition.

CHAPTER II

Method

Participants

One-hundred and seventy-two female participants were recruited from introductory psychology courses (Psy102 and Psy202) at Ryerson University in Toronto, Ontario. Participation counted towards the fulfillment of a 0.5 research participation credit towards their course. Of the 172 participants, data from 5 were excluded as they were over the age of 30. This was done in order to keep the sample relatively homogenous in terms of age. An additional 4 participants were excluded because technical issues, such as the computer not recording their responses, resulted in missing data from their session. Finally, one participant did not complete the study. This resulted in a final sample size of 162 participants with 54 in each condition. All participants provided written consent to participate upon their arrival.

Design Overview

Participants were randomly assigned to one of three conditions: a Minimized Demand, an Implied Demand, or a Control group. The study was advertised to student participants as one investigating the "effects of taking a break on subliminal information processing". Participants signed up for the study via a participant-management website and took part individually. In the pre-test measure of mood, participants completed both the implicit and explicit mood measures at a computer station. Upon completion, participants in all three groups were asked to take a ten-minute break and were provided with two magazines to read, either fashion magazines (Minimized and Implied Demand groups) or non-fashion magazines (Control group). The level of demand was manipulated at this point with exposure to greater demand characteristics for the Implied Demand group (see description below). Following the ten-minute break period, post-test

measures of both implicit and explicit mood were obtained, as well as general demographic information. Both quantitative and qualitative measures of participants' potential awareness of the research hypothesis were completed as well. A debriefing session followed participants' completion of the measures.

Materials

Magazines. A total of four issues, including two fashion (Fashion and Elle) and two scientific/factual (Scientific American and Mental Floss) magazines were used. To check that the issues of the two fashion magazines were representative of fashion magazines in general, a procedure adapted from Buote et al. (2011) was used, in which the female model images were rated on age, attractiveness, and body type (Table 1). Model images in which either the face or body were not displayed were given a code of "unknown" for that specific component and were not included in the respective component counts below. In addition, the messages contained in the fashion magazines were also coded into six categories (Table 2). A second coder rated 30% of the images and content in the magazines; inter-rater reliability was 86% for model images and 80% for content messages. Discrepancies between raters were resolved by further discussion. Neither the images or content in Scientific American or Mental Floss were coded. Those two magazines were only provided to participants in the control condition.

Table 1

Percentages and raw counts (in parentheses) of female model images in both
fashion magazines. Percentages obtained in Buote et al.'s (2011) study are
also included.

Variable	Fashion	Elle	Buote et. al
Age			
Young	92 (108)	73 (197)	84
Middle age	8 (9)	24 (64)	15
Older	0	3 (8)	1
Attractiveness			
Very attractive	41 (47)	24 (63)	72
Attractive	59 (69)	75 (200)	28
Unattractive	0	1 (4)	2
Body Type			
Thin	73 (64)	68 (106)	76
Curvy	3 (3)	4 (7)	5
Average	24 (21)	27 (42)	16
Heavy	0	.6 (1)	.3
Fit	0	0	2.2
Very muscular	0	.6 (1)	0

Our results for both the ratings of female model images, as well as the content of

messages in both the fashion magazines, are similar to those obtained by Buote et al. (2011).

Namely, model images were primarily young, thin, and average or above-average in

attractiveness. Furthermore, body types such as curvy, heavy, or fit were almost nonexistent. In

regards to the content of magazines, the majority of content was categorized as

Controllability/Attainability. Following Buote et al. (2011), written text was included in this

category if it "focused on controlling aspects of physical appearance to attain a desired

appearance goal…" (p. 330). The number of messages of this type in our magazines is unlike

that of Buote et al.'s (2011), who found that messages of this type were second after those in the

Lifestyle category. This discrepancy might be explained by the fact that the magazines in Buote

et al.'s (2011) study were specifically chosen to include an equal number of Lifestyle and

Fashion magazines. In contrast, we used magazines that are primarily considered Fashion

magazines (Fashion and Elle).

Table 2

Percentages and raw counts (in parentheses) of content categories in both fashion magazines. Raw counts obtained in Buote et al.'s (2011) study were converted to percentages and are also included.

Content category	Fashion	Elle	Buote et. al
Control/attainability	59 (61)	48 (63)	21
Acceptance/social value	2 (2)	3 (4)	20
Health	1 (1)	4 (5)	12
Lifestyle	33 (34)	21 (28)	30
Social responsibility	0	0	4
Other content	5 (5)	24 (31)	14

Positive and Negative Affect Schedule (PANAS). The PANAS is a reliable and

validated, 20-item scale designed to measure aspects of both explicit positive and explicit

negative affect (Crawford & Henry, 2004; Watson, Clark, & Tellegen, 1988b). Items such as

interested, attentive, and enthusiastic measure positive affect, whereas items such as scared,

distressed, and jittery measure aspects of negative affect. Participants are asked to rate the extent

to which they feel the various affect states "right now". The items are rated on a Likert scale

ranging from 1 = very slightly or not at all to 5 = extremely.

Visual analogue scales (VAS). As an additional measure of explicit mood, three VAS

items were implemented (Heinberg and Thompson, 1995). The items were rated on a scale of 0

to 100, with endpoints of happy-unhappy, angry-calm and confident-insecure. Responses for the

angry-calm item were reverse-scored and a mean VAS value was calculated for each participant

(with higher scores indicating greater negative affect). These VAS have been shown to be

affected by the presentation of models extracted from media images in prior work (Want, Botres, Vahedi & Middleton, 2015).

Implicit mood measure. To measure implicit mood, a validated measure by Hass et al. (1992) was utilized. This is a computer-administered measure in which a "stimulus word", which is truly a nonsense word, is flashed for 20ms on the screen, followed by a string of Xs. This is far too brief to be read, but long enough for participants to see that something has been presented. After the word is flashed on the screen, four response words are presented and the participant is asked to select the one that "feels similar in meaning to the word that was flashed". Of these four response words, one is always a positive affect adjective or a negative affect adjective, while the other three are neutral. The response words are similar to the stimulus word in both length and physical appearance in order to reduce bias based on these factors. There were 20 trials in each administration (pre-test and post-test), with each administration consisting of 8 negative and 8 positive affect adjectives, as well as 2 control trials. However, the pre and post-test trials consisted of different sets of words. An example of an item is the stimulus word Iad, and the four response words Had, Lad, Mad and Pad (where Mad is the negative affect adjective). The number of positive and negative affect words participants select is thought to be an implicit measure of their positive and negative mood, respectively (Hass et al., 1992).

Individualism and Collectivism Scale. In order to reduce demand characteristics, participants were informed that in addition to determining the influence of taking a break on subliminal information processing, the researcher was also investigating the impact that different personality characteristics and current mood may have on participants' ability to process subliminal information. Therefore, the Individualism and Collectivism Scale (also known as the Culture Orientation Scale) was administered during the pre-test in order to strengthen this cover

story (Triandis & Gelfland, 1998). This measure consists of rating 16 statements pertaining to various aspects of horizontal and vertical individualism and collectivism. Data obtained from this measure were not analyzed.

Short Form of the Need for Cognition scale. Several items from the short form of the Need for Cognition scale were utilized (Cacioppo, Petty, & Kao, 1984). In accordance with the cover story, these distracter items were included to serve as an assessment of participants' personalities, along with the items from the Five Factor Model Rating Form. This measure consists of 18 statements pertaining to participants' self-ratings of their need for cognition. Participants rated how characteristic each item is of them, with 1 being 'extremely uncharacteristic' and 5 being 'extremely characteristic'. As with the Five Factor Model Rating Form, a shortened version (only the first 5 items) was used ("I would prefer complex to simple problems" to "I try to anticipate and avoid situations…"), in order to decrease completion time. Data obtained from this measure were not analyzed.

Perceived Awareness of the Research Hypothesis (PARH) scale. Designed by Rubin, Paolini, & Crisp (2010), this 4-item scale was presented at the end of the study, prior to the debriefing session, in order to ascertain participants' awareness of the study hypothesis. Participants were asked to provide ratings to the following four items: "I knew what the researchers were investigating in this research", "I wasn't sure what the researchers were trying to demonstrate in this research", "I had a good idea about what the hypotheses were in this research" and "I was unclear about exactly what the researchers were aiming to prove in this research". A 7-point Likert scale is used for responses (1 = strongly disagree to 7 = strongly agree) and items 2 and 4 were reverse-scored prior to analysis. The PARH scale has been found to have good internal consistency (Rubin, Paolini, & Crisp, 2010) and has been used in several

studies to investigate the impact of demand characteristics. Mean values of the PARH scores were computed.

Open-ended questions. Participants were also asked two open-ended questions regarding their awareness of the true study hypothesis (While completing the study, do you believe you became aware of the study's true purpose/hypothesis? If yes, what do you believe the study's true hypothesis is?) as well as the point at which they became aware of the hypothesis (If you do believe you became aware of the study's hypothesis/purpose, at which point during the study do you believe you became aware?). Participants were coded as being aware of the study's purpose if their responses indicated knowledge of some association between exposure to the magazine images and the subsequent effects on mood (or other constructs such as confidence or self-esteem).

Procedure and Manipulation of Demand

Upon arrival, participants were seated alone in a testing room with a computer station. A consent form was provided and the experimenter restated the purpose of the study to the participant as one investigating the impact of taking a break on subliminal information processing. The experimenter provided a brief description of subliminal information as information that is below our perceptual threshold. Participants were then notified that there were a number of components to the study (see Figure 1). First, there would be some questionnaires pertaining to their personality as well as current mood. A subliminal information processing task would then ensue. Participants were then notified that following this component, they would have a ten-minute minute break and repeat the measures once again, in order to ascertain the long-term effects of practice on their processing of subliminal information. The experimenter also mentioned that the repeated exercise involving the subliminal information would have

different subliminal words, so they shouldn't try to memorize the words or worry about forgetting any of the information. Upon completion of these measures, participants were requested to take a ten-minute break. In the Implied Demand condition, demand was implied as the experimenter provided the participant with the fashion magazines. The participant was specifically instructed to pay special attention to the images, as the experimenter was interested in investigating their effects on participants' ability to process subliminal information in the post-test measure, as well as any effects the magazine images might have on their mood. Participants in the Minimized Demand condition were also provided with the same fashion magazines, but for these participants, the supposed reason for reading them was to ensure that all the participants had a consistent set of experiences whilst partaking in the study. In other words, the fashion magazines were presented as just something that we were asking all participants to read during the break, to ensure consistency in their experience during the break. Participants in the Control condition were provided with an issue each of Scientific American and Mental Floss and were also requested to read them in order to maintain a similar experience by all participants. Following this break, participants were notified that they would be completing the same mood and subliminal information processing measures as the pre-test, as well as completing questions pertaining to general demographics. Open-ended questions, as well as the PARH scale were also administered in order to determine participants' awareness of the study design. Upon completion, participants were provided with a debriefing sheet and the experimenter discussed the true purpose of the study.

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│      Individualism/collectivism + Need for Cognition scale     │
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                            ⤵⤴
┌─────────────────────────────────────────────────────────────┐
│                Explicit mood measure (PANAS)                  │
└─────────────────────────────────────────────────────────────┘
                            ⤵⤴
┌─────────────────────────────────────────────────────────────┐
│        Subliminal processing task (Implicit mood measure)      │
└─────────────────────────────────────────────────────────────┘
                            ⤵⤴
┌─────────────────────────────────────────────────────────────┐
│                            Break                              │
└─────────────────────────────────────────────────────────────┘
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┌─────────────────────────────────────────────────────────────┐
│        Subliminal processing task (Implicit mood measure)      │
└─────────────────────────────────────────────────────────────┘
                            ⤵⤴
┌─────────────────────────────────────────────────────────────┐
│                Explicit mood measure (PANAS)                  │
└─────────────────────────────────────────────────────────────┘
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┌─────────────────────────────────────────────────────────────┐
│        Demographics/ PARH scale/ open-ended questions         │
└─────────────────────────────────────────────────────────────┘
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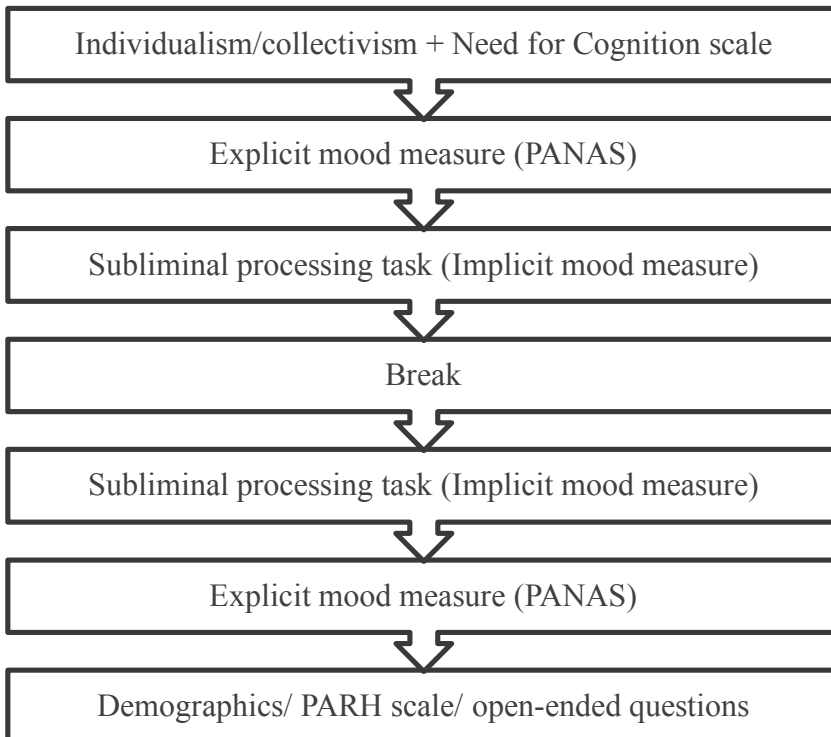
Figure 1. Outline depicting the order in which all participants completed the study measures.

CHAPTER III

Results

Demographics

     Age, body mass index (BMI) and self-reported ethnicity of participants are presented in Table 3. BMI values were calculated from participants' self-reported height and weight (kg/m^2). Participants in the three conditions did not significantly differ in regards to age, $F (2, 159) = .04$, $p = .96$ or BMI, $F (2, 151) = 1.70$, $p = .18$.

Table 3

Demographic information of participants in all three conditions.

Variable	Condition		
	Implied Demand (N = 54)	Minimized Demand (N = 54)	Control (N = 54)
Age	19.37 (3.55)	19.54 (3.20)	19.48 (2.50)
BMI	21.63 (2.94)	23 (4.61)	22.25 (3.59)
Ethnicity	20 (37%) White/Caucasian 12 (22%) South Asian, 7 (13%) Asian, 5 (9%) Southeast Asian, 4 (7%) East Asian, 4 (7%) Black/African-American, 2 (4%)Middle-eastern	27 (51%) White/Caucasian, 6 (11%) South Asian, 6 (11%) Asian, 2 (4%) Southeast Asian 2 (4%) East Asian 3 (6%) Black/African American 2 (4%) Middle-eastern 3 (6%)Hispanic/Latino, 2 (4%) Mixed	19 (36%) White/Caucasian, 5 (9%) South Asian 9 (17%) Asian, 6 (11%) Southeast Asian, 4 (8%) East Asian, 4 (8%) Black/African-American, 1 (2%) Middle-eastern 2 (4%) Hispanic/Latino, 3 (6%) Mixed

Planned analyses

Table 4

Mean scores (and standard deviations of scores) on the scales used from pre- to post-test. Scores on the implicit mood measure represent the mean number of positive or negative words chosen.

Scale	Condition		
	Implied Demand Pre-test – post-test	Minimized Demand Pre-test – post-test	Control Pre-test – post-test
PANAS (pos.)	26.54 (7.93) – 25.22 (8.33)	26.83 (7.52) – 24.44 (8.12)	26.91 (7.74) – 25.06 (7.83)
PANAS (neg.)	14.63 (5.23) – 12.93 (3.70)	15.48 (4.99) – 13.37 (3.92)	15.67 (5.83) – 13.67 (5.10)
VAS	31.25 (14.65) – 30.31 (16.13)	31.44 (15.55) – 31.03 (16.98)	33.05 (17.10) – 31.08 (16.60)
Implicit mood (pos.)	2.98 (2.09) – 3.85 (1.89)	2.41 (1.75) – 3.15 (2.17)	2.70 (1.71) – 3.02 (1.33)
Implicit mood (neg.)	3.02 (1.91) – 2.57 (1.90)	2.98 (1.84) – 2.57 (1.97)	2.80 (1.86) – 2.30 (1.68)

Explicit negative affect. A 3 (Condition: Implied Demand vs. Minimized Demand vs. Control) × 2 (Time: Pre-Test vs. Post-Test) mixed design ANOVA was conducted on participants' scores on the negative affect scale of the PANAS. A significant main effect of Time was obtained, $F (1, 159) = 55.79$, $p < .001$, demonstrating that participants reported significantly less negative affect at post-test compared to pre-test. There was no significant main effect of Condition, $F (2, 159) = .55$, $p = .58$. The interaction between Time and Condition was not significant, $F (2, 159) = .22$, $p = .80$.

Explicit positive affect. A 3 (Condition: Implied Demand vs. Minimized Demand vs. Control) × 2 (Time: Pre-Test vs. Post-Test) mixed design ANOVA was conducted on participants' scores on the positive affect scale of the PANAS. A significant main effect of Time was obtained, $F (1, 159) = 13.48$, $p < .001$, demonstrating that participants reported significantly less positive affect at post-test compared to pre-test. Neither the main effect of Condition, $F (2, 159) = .032$, $p = .97$, nor the interaction between Time and Condition were significant, $F (2, 159) = .38$, $p = .69$.

Implicit negative mood. A 3 (Condition: Implied Demand vs. Minimized Demand vs. Control) × 2 (Time: Pre-Test vs. Post-Test) mixed design ANOVA was conducted on participants' scores on the negative items of the implicit mood measure. A significant main effect of Time was obtained, $F (1, 159) = 10.55$, $p = .00$, demonstrating that participants chose significantly fewer negative affect words at post-test compared to at pre-test. No significant main effect of Condition, $F (2, 159) = .39$, $p = .68$ was found. The interaction between Time and Condition was not significant, $F (2, 159) = .04$, $p = .96$.

Implicit positive mood. A 3 (Condition: Implied Demand vs. Minimized Demand vs. Control) × 2 (Time: Pre-Test vs. Post-Test) mixed design ANOVA was conducted on

participants' scores on the positive items of the implicit mood measure. A significant main effect of Time was obtained, $F (1, 159) = 16.79$, $p < .001$, demonstrating that participants chose significantly more positive affect words at post-test compared to at pre-test. No significant main effect of Condition, $F (2, 159) = 2.71$, $p = .07$ was found. The interaction between Time and Condition was not significant, $F (2, 159) = .1.15$, $p = .32$.

VAS. A 3 (Condition: Implied Demand vs. Minimized Demand vs. Control) × 2 (Time: Pre-Test vs. Post-Test) mixed design ANOVA was conducted on participants' VAS scores. The analysis revealed that neither Time, $F (1, 159) = 2.22$, $p = .14$, nor condition, $F (2, 159) = .10$, $p = .91$, had a significant effect. The interaction between Time and Condition was also not significant, $F (2, 159) = .37$, $p = .69$.

PARH. A one-way ANOVA was conducted on participants' mean PARH scores. The analysis revealed there was no significant difference in participants' mean PARH scores across the three conditions, $F (2, 159) = .776$, $p = .46$. Mean PARH values were $M = 3.08$ in the Implied Demand condition, $M = 2.84$ in the Minimized Demand condition, and $M = 3.01$ in the Control condition. Because higher ratings on the 7-point Likert scale indicate greater awareness of the research hypothesis, the obtained mean ratings suggest that participants had little awareness of the true study hypothesis.

Open-ended questions. A total of 16 participants (9 in the Implied Demand and 7 in the Minimized Demand condition) were coded as being aware of the true study hypothesis. From pre- to post-test, scores of these participants did not significantly differ from the rest of the participants in the Implied and Minimized Demand conditions on any of the measures we used.

Exploratory analyses

The planned analyses did not produce results in support of the study hypotheses. Both sets of our hypotheses assumed that exposure to fashion magazines – at least in the implied demand condition – would raise participants' explicit negative affect and lower their explicit positive affect. In addition, our second set of hypotheses assumed that exposure to fashion magazines would raise participants' implicit negative mood and decrease their implicit positive mood as well. To our surprise, however, fashion magazines did not seem to have the expected effect on participants' negative affect/mood on either the explicit or implicit measures, in any condition. In fact, contrary to previous literature, exposure to fashion magazines in our study seemed to decrease negative affect/mood, both explicitly and implicitly. To probe further, we conducted a series of exploratory analyses by deconstructing the PANAS and VAS measures and examining changes in each of the individual items (see Tables 5, 6, and 7). For each condition, paired-samples t-tests were conducted for each item in order to assess the significance and direction of change.

Table 5

Mean changes in positive affect scale items of the PANAS from pre- to post-test in each of the three conditions.

PANAS item	Condition		
	Implied Demand	Minimized Demand	Control
Positive affect			
Interested	3.09 (.996) – 2.91 (1.14)	3.52 (.863) – 3.04 (1.03)**	3.46 (.946) – 3.06 (1.09)*
Excited	2.09 (1.12) – 2.24 (1.06)	2.09 (1.03) – 2.20 (1.12)	2.46 (1.11) – 2.54 (1.09)
Enthusiastic	2.22 (1.27) – 2.33 (1.18)	2.44 (1.18) – 2.31 (1.13)	2.46 (1.16) – 2.54 (1.04)
Proud	2.17 (1.21) – 2.17 (1.23)	2.11 (1.11) – 2.02 (1.09)	2.39 (1.11) – 2.19 (1.10)*
Inspired	2.43 (1.30) – 2.37 (1.23)	2.63 (1.17) – 2.39 (1.27)	2.33 (.971) – 2.26 (1.14)
Determined	2.94 (1.34) – 2.67 (1.21)	3.04 (1.21) – 2.54 (1.18)**	2.85 (1.14) – 2.56 (1.16)*
Attentive	3.59 (1.02) – 2.93 (1.27)***	3.31 (1.27) – 2.93 (1.16)*	3.24 (1.20) – 2.85 (1.22)*
Alert	3.15 (1.16) – 2.74 (1.26)**	3.02 (1.17) – 2.65 (1.15)*	2.70 (1.27) – 2.59 (1.11)
Strong	2.50 (1.15) – 2.65 (1.10)	2.35 (1.07) – 2.22 (1.04)	2.50 (1.19) – 2.24 (1.15)
Active	2.35 (1.32) – 2.22 (1.16)	2.31 (1.10) – 2.15 (1.04)	2.50 (1.24) – 2.24 (1.18)

*Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 6

Mean changes in negative affect scale items of the PANAS from pre- to post-test in each of the three conditions.

| PANAS item | Condition | | |
	Implied Demand	Minimized Demand	Control
Negative affect			
Upset	1.41 (.922) – 1.24 (751)	1.52 (.986) – 1.30 (.633)	1.50 (.947) – 1.44 (.883)
Distressed	1.74 (1.03) – 1.61 (.856)	1.70 (1.08) – 1.54 (.862)	2.02 (1.19) – 1.67 (1.06)*
Guilty	1.28 (.763) – 1.13 (.436)	1.56 (1.14) – 1.37 (.831)*	1.26 (.678) – 1.19 (.517)
Scared	1.39 (.979) – 1.11 (.420)*	1.43 (.924) – 1.17 (.466)**	1.41 (.836) – 1.22 (.572)*
Hostile	1.20 (.562) – 1.11 (.372)	1.17 (.466) – 1.13 (.391)	1.37 (.875) – 1.31 (.748)
Irritable	1.67 (1.01) – 1.54 (.840)	1.59 (.942) – 1.41 (.813)	1.70 (.816) – 1.46 (.745)**
Nervous	1.69 (1.11) – 1.26 (.620)**	2.04 (1.06) – 1.59 (.942)**	1.94 (1.11) – 1.35 (.677)***
Jittery	1.94 (1.30) – 1.56 (1.00)*	1.94 (1.22) – 1.46 (.966)**	1.96 (1.06) – 1.67 (.932)*
Afraid	1.26 (.782) – 1.15 (.529)	1.19 (.585) – 1.17 (.541)	1.26 (.650) – 1.24 (.581)
Ashamed	1.06 (.231) – 1.22 (.664)*	1.35 (.850) – 1.24 (.612)	1.24 (.612) – 1.11 (.372)

Note. $*p < .05, **p < .01, ***p < .001$.

Table 7

Changes in individual VAS items from pre- to post-test in each of the three conditions. Lower scores indicate more positive affect.

VAS item	Condition		
	Implied Demand	Minimized Demand	Control
Happy-unhappy	31.85 (18.53) – 30.74 (18.42)	35.20 (19.80) – 33.96 (19.84)	32.81 (22.11) – 32.46 (20.20)
Confident-insecure	39.80 (19.67) – 36.89 (20.61)	41.04 (21.18) – 38.87 (22.95)	42.35 (19.84) – 37.15 (19.78)*
Angry-calm[a]	22.11 (18.75) – 23.30 (18.62)	18.07 (16.09) – 20.22 (17.54)	23.98 (21.12) – 23.63 (18.92)

Note. $*p < .01$.
   [a] Scores were reverse-coded.

Overall, the exploratory results mirror those obtained from the planned analyses. Both sets of items assessing positive and negative affect in the PANAS show a decrease in affect following exposure to media images in the Implied and Minimized Demand groups. Exploratory results obtained from analyses of the individual VAS items showed no significant changes in either the Implied or Minimized Demand group from pre- to post-test. The only result that appears to offer even a modicum of support for the hypotheses that media exposure results in increased negative affect is that participants in the Implied Demand condition, but not the other two conditions, reported feeling more "ashamed" at post-test compared to pre-test.

CHAPTER V

Discussion

The aim of the current study was to investigate the potential role demand characteristics might have in experimental studies assessing the impact of idealized media images on female viewers. Based on the existing literature, both sets of our hypotheses assumed that the images presented to participants would result in decreases in positive affect and increases in negative affect on the explicit measures (the PANAS and the VAS), at least in the Implied Demand condition. Much to our surprise, this assumption was not supported, in that the magazine images seemed to decrease both positive and negative affect on the PANAS in both our Implied and Minimized Demand conditions, and leave the VAS affect measure unchanged. In order to investigate further, we conducted a series of exploratory analyses by examining the individual items of both the PANAS and VAS scales. These results indicated that the items assessing positive affect generally decreased or remained consistent following exposure to idealized images. However, items assessing negative affect also showed consistent decreases after viewing the magazine images, with the exception of the "ashamed" item, which increased in the Implied Demand condition.

Our implicit mood measure also demonstrated a decrease in negative implicit mood following exposure to media images. Moreover, this finding was accompanied by an increase in implicit positive mood. Taken together, our results indicate that from before to after exposure to idealized media images participants' affect/mood either improved (less negative affect on the PANAS, as well as more positive and less negative mood on the implicit measure) or stayed the same (no change on the VAS), with participants experiencing few detrimental effects (less positive affect on the PANAS).

Our results are surprising given that the majority of previous research has shown that exposure to media images typically results in detrimental consequences, including increases in negative affect and decreases in positive affect. That said, although this pattern is the general norm, a subset of studies has identified the potential positive effects that exposure to idealized images might have on female viewers (e.g. Martin & Gentry, 1997; Smeesters & Mandel, 2006; Mills et al., 2002; Knobloch-Westerwick & Crane, 2011). However, before addressing the extent to which the current results are externally consistent (i.e. consistent with previous research) it is important to address the extent to which they are internally consistent.

Are Our Results Internally Consistent?

On the surface, the results from some of the measures in the present study seem contradictory. In particular, participants in all three conditions seemed to experience a decrease in positive affect as measured by one explicit measure (the PANAS) while simultaneously experiencing an increase in positive mood, as measured by the implicit measure. However, a closer inspection of these particular measures may help resolve this seeming inconsistency.

Activation versus pleasantness in affective states. Upon closer examination, we realized that the individual items of the three measures (the PANAS, the VAS, and the implicit mood measure) might be measuring fundamentally different aspects of positive and negative emotion. Previous researchers (e.g. Feldman Barrett & Russell, 1999) have posited that in addition to the pleasantness of emotion (ranging from positive to negative), a second dimension is the activation of the emotion (ranging from activated to deactivated). Based on this interpretation, affect states such as happy would be high in pleasantness and relatively high in activation, whereas the state of contented would be high in pleasantness but relatively low in activation (see Figure 2). In addition, states such as stressed would be high in both unpleasantness and in activation, whereas

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depressed would be high in unpleasantness, but low in activation. When this structure of affect is applied to the items of the PANAS, we see that the majority of both positive and negative items measure high activation affect states – items such as excited, alert, and determined for positive affect and jittery, hostile, and irritable for negative affect. In contrast, the items from our implicit mood measure included items that were both high and low in activation, for both the positive and negative terms (see Appendix A and B). Taken together, our findings might indicate that the experience of reading fashion magazines deactivated participants, resulting in decreases on both the positive and negative affect subscales of the PANAS. However, our results from the implicit mood measure – which had a more equal distribution of high and low activation affect states – indicate that participants who read fashion magazines might have had a pleasant experience, since negative mood decreased and positive mood increased from pre- to post-test on this measure.
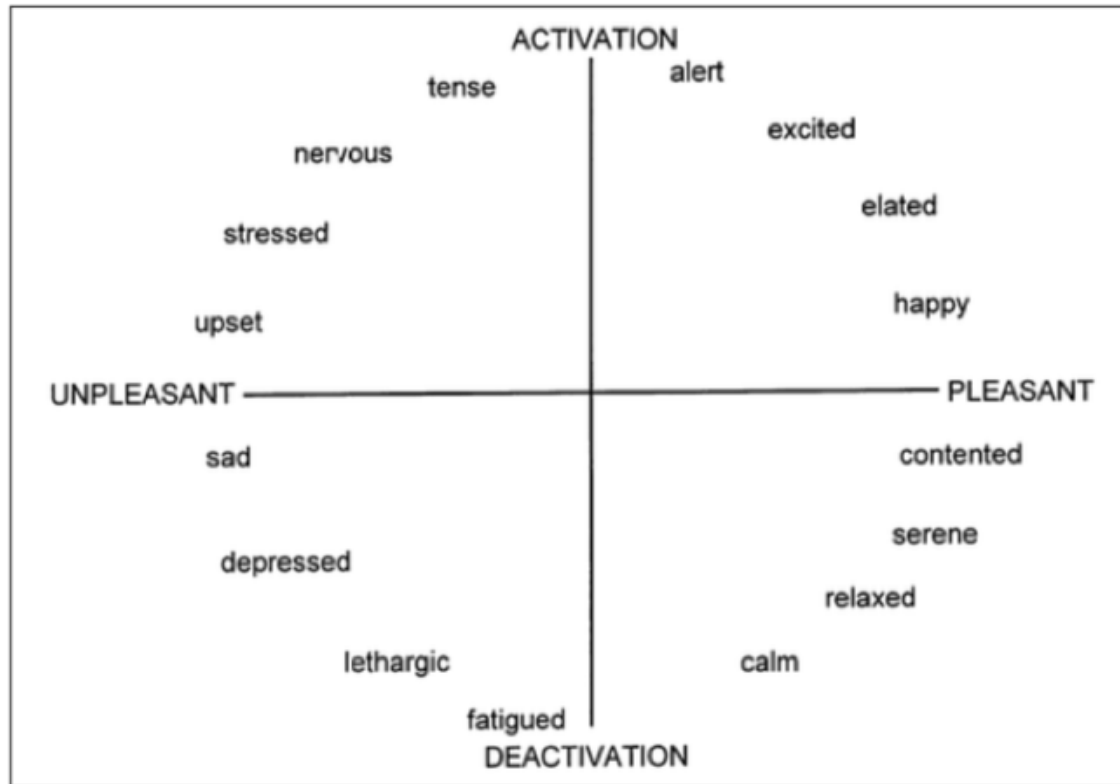
ACTIVATION

tense   alert

nervous   excited

stressed   elated

upset   happy

UNPLEASANT ——————————————— PLEASANT

sad   contented

depressed   serene

                    relaxed

lethargic   calm

fatigued
DEACTIVATION

Figure 2. Two-dimensional schematic of the structure of affect. Reprinted from The Structure of Current Affect: Controversies and Emerging Consensus, by L. Feldman Barrett and J. A. Russell, 1999, *Current Directions in Psychological Science, 8,* p. 11.

Although this serves as a plausible interpretation of how the results from the PANAS and implicit measure can be reconciled, we concede that it is only a post hoc explanation. None of our hypotheses had considered potential differences in the components of affect that these measures assess. As a result, more systematic research is required in order to determine whether there are fundamental differences between these measures. But, here we advance the speculation that exposure to media images, as conducted in the present study, may reduce participants' levels of activated affect states, yet leave unchanged or even increase their levels of pleasant affect states.

External Consistency: Why Didn't We Find Generally Detrimental Effects of Media Exposure as Typically Found in Previous Studies?

Leaving aside the results from the PANAS (which, we have argued, may reflect changes in participants' activated affect states) our study appeared to show an increase in pleasant states as measured by the implicit mood measure, a decrease in unpleasant states on the same measure, and no effect on pleasant affect states (e.g. happiness) on the explicit VAS measure. These results do not match the typical pattern of results found in most studies that have exposed participants to thin-ideal media images (i.e. increases in negative affect/mood and decreases in positive affect/mood). In what follows we consider four potential reasons for this inconsistency with previous research: (1) Compared to previous research, our thin-ideal images were not ideal enough to provoke detrimental effects; (2) Participants in our study did not receive enough exposure to the thin-ideal images; (3) Previous results reflect the influence of demand characteristics, and the demand characteristics of the present study – even in the Implied Demand condition – were low; (4) Previous results used a series of image-only stimuli, whereas we used whole magazines which included many messages about the attainability of the appearance represented in the images therein.

(1) The thin-ideal images in the present study were not ideal enough. One possibility is that the thin-ideal images used in the present study represented less of an upward comparison than the thin-ideal images used in previous research. This suggestion is based on the fact that the images we used were less likely to be rated as "Very Attractive" compared to the sample of magazine images rated by Buote et al. (2011). As a result, it may be that the magazines we chose to use in the study just happened to have contained fewer very attractive media images compared to the average women's magazine, and thus our magazines may have been less likely to present

"ideal" comparison standards to our participants. However, the ratings given to the images in our magazines for "Body Type" produced similar results to Buote et al.'s magazines; just as many of our images were rated as "Thin" as in Buote et al.'s magazines. So, our magazines images would have still served as upward comparison targets for participants in regards to weight. Furthermore, the majority of our images were rated as "Attractive", and similarly small proportions of the images were "Unattractive" compared to those of Buote et al. (2011). The difference between ratings of "Attractive" and "Very Attractive" was quite subjective, with "Attractive" being coded if the model was "neither very attractive nor unattractive" and "Very Attractive" being coded if the model was "more attractive than the average person" (Buote et al., 2011, p. 324). As a result, the discrepancy between our ratings and Buote et al.'s (2011) might be due to the subjective preferences of the small number of coders in our study, rather than to actual differences in the images themselves. That said, it is also possible that the magazine images used in our study were less attractive than those typically used in studies investigating the effects of idealized images.

(2) Participants in our study may have chosen not to expose themselves to the images. An additional concern is that participants might not have even read the magazines provided to them in the present study, therefore providing an alternative explanation for the lack of detrimental effects. During the break component, the experimenter provided instructions, gave the magazines to the participant, and left them alone in the room for ten minutes. This raises the possibility that the participants did not actually read the magazines during this ten-minute unsupervised break. However, although out of the room, the experimenter was able to view the participants through a one-way mirror from an adjoining room, and observed that all participants at least opened and looked at one of the magazines. In future studies, it would be wise to incorporate some way of either ensuring that participants comply with the instruction to read the

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magazines (perhaps by having the experimenter sit in the same room with the participant during the break) or to unobtrusively monitor how much of the ten-minute break the participant spends reading the magazines.

(3) The results of previous studies represent the effects of demand characteristics. The purpose of this thesis was to investigate the role of demand characteristics in research on the media's influence on viewers' mood. To do so, we attempted to manipulate demand by creating a condition in which demand characteristics were minimized and one in which there was implied demand. However, it is possible that neither of these conditions actually involved very many demand characteristics. In other words, it is possible that many of the previous studies finding detrimental effects of media images on participants' mood reflect the effect of demand characteristics, and that we did not find such detrimental effects because the level of demand in the present study – even in the Implied Demand condition – was too low.

To see why this may be so, consider the fact that some features of a typical study of this topic that may provide demand cues to participants were not present, even in the Implied Demand condition in the present study. For instance, there was no assessment of appearance or body satisfaction in a pre- to post-test manner in the present study. Nor did we present a concentrated set of images, presented one after another with no written context to participants. Furthermore, the present study may have included a reason for presenting the thin-ideal images to participants – in the form of a magazine that participants read to take a break – that participants found more plausible than the reasons given (if any) in prior research. In short, the demand characteristics in the present study may have been too few, even in the Implied Demand condition, for participants to guess the study hypotheses. This speculation raises the possibility that many of the prior studies showing detrimental effects of thin-ideal imagery may have

resulted from demand. Future research might assess this suggestion by involving a variety of conditions, some of which closely replicate the level of demand characteristics involved in prior research, most especially by including assessments of appearance satisfaction before and after the presentation of thin-ideal images devoid of context.

(4) The use of whole magazines, instead of image-only stimuli. One final possibility for the discrepancy between the present study and prior research may be the use of complete magazines in the present study; typically, thin ideal images are presented to participants devoid of context or accompanying written material, either as a series of printed images or as a slideshow on a computer. However, in order to increase the ecological validity of our findings and reduce demand characteristics, we used complete and unaltered magazines. This resulted in exposure not only to idealized images, but also the various messages included in the magazines. As found in our content analysis, the largest portion of messages in the fashion magazines we used described or advertised ways in which readers could attain a desired appearance. Previous research has shown that these attainability or self-improvement messages can actually increase self-perceptions of physical attractiveness, even when presented alongside thin-ideal images (Martin & Gentry, 1997; Mills et al., 2002; Veldhuis, Konjin, & Knobloch-Westerwick, 2016). Therefore, it is possible that attainability messages accompanying the idealized images in the present study had a positive impact on readers, by also including ways in which they could attain a desired look. As a result, the participants may have felt less in the way of unpleasant affect, and more in the way of pleasant affect from exposure. However, because of the limited number of studies using complete magazines, it is difficult to determine exactly what types of messages might counteract the effects of images or produce positive effects.

This account, as all those we have discussed here, is admittedly post-hoc, and more research is needed to investigate the impact of different messages encountered in fashion magazines and the effects they might have on viewers. But, this study may provide an indication that the experience of reading a complete fashion magazine may not be as unpleasant as exposure to a concentrated set of images drawn from those magazines and presented without context.

Final Conclusions

The current study aimed to examine the potential role demand characteristics might have in experiments where female viewers are exposed to idealized images. Much to our surprise, participants who read fashion magazines experienced similar changes in affect to control participants who read non-fashion magazines. The magazines appeared to decrease readers' activated affect states, while potentially reducing unpleasant and increasing pleasant mood. Given that participants' reactions to the magazines also did not differ according to our attempted manipulation of the demand characteristics of the study, it is difficult to conclude much about the effect of demand from the present study. As this is one of the few studies directly investigating demand characteristics, further research is undoubtedly needed in order to determine the influence they might have in experimental designs. Our results, however, do raise interesting questions regarding the impact of complete fashion magazines, as well as measures of affect and the conclusions we might draw from them. One possibility is that reading a complete fashion magazine – as opposed to being exposed to just a series of images from one – is, at least for the average participant, a deactivating but not unpleasant experience. Future research using entire magazines, rather than just the images from them, is clearly warranted.

Appendix A

Pre-manipulation Implicit Mood Measure stimuli

Trial	Nonsense word	Response items	Trial	Nonsense word	Response items
1	Nased	Reused Ceased Pleased Greased	2	Garcessed	Recessed Depressed Processed Regressed
3	Famure	Blur Demure Secure Nature	4	Iad	Had Lad Mad Pad
5	Thole	Sole Whole Mole Pole	6	Anful	Mindful Lawful Cupful Cheerful
7	Cower	Shower Tower Mower Grower	8	Stuwn	Stupid Stuart Student Studio
9	Timtrage	Beverage Storage Discourage Entourage	10	Gloce	Fence Tense Sense Hence
11	Cine	Dine Pine Line Fine	12	Bretain	Uncertain Curtain Fountain Mountain
13	Hmraeness	Happiness Habitualness Harness Highness	14	Amanrated	Illustrated Frustrated Demonstrated Infiltrated
15	Sapile	Satire Sapphire Satisfied Saturn	16	Inead	Tread Bread Scared Ahead

17	Fanatent	==Consistent==	18	Insket	Hassock
		Patent			Tussock
		Existent			Cassock
		Advertent			Socket

Appendix B

Post-manipulation Implicit Mood Measure Stimuli

Trial	Nonsense word	Response items	Trial	Nonsense word	Response items
1	Stroet	Reset Upset Cadet Tenet	2	Incoant	Recant Pleasant Replant Present
3	Uad	Had Pad Sad Fad	4	Foger	Jaeger Anger Singer Pager
5	Adood	Good Blood Hood Soot	6	Whad	Paid Lad Glad Tad
7	Maous	Famous Anxious Obvious Various	8	Leuse	Infuse House Douse Confuse
9	Dary	Merry Berry Very Ferry	10	Moree	Green Degree Agree Pedigree
11	Colthy	Timothy Unworthy Breathy Frothy	12	Reolped	Relaxed Related Relayed Relaunched
13	Comlet	Computer Commodity Compile Commute	14	Gload	Glove Globe Gloss Gloom
15	Confiart	Conference Confidante Confident Configure	16	Inconmure	Inconclusive Incongruent Inconsistent Inconspicuous

17	Eaook	Book	18	Grong	Throng
		Brook			<mark>Strong</mark>
		Cook			Prong
		Look			Sarong

Appendix C

Short Form of the Need for Cognition scale

Instructions: For each of the following statements below, please indicate to what extent the statement is characteristic of you. If the statement is extremely uncharacteristic of you (not at all like you) please select "1" (extremely uncharacteristic); if the statement is extremely characteristic of you (very much like you) please select a "5" (extremely characteristic). Of course, a statement may be neither extremely uncharacteristic nor extremely characteristic of you; if so, please use the number in the middle of the scale that describes the best fit. Please keep the following scale in mind as you rate each of the statements below: 1 = extremely uncharacteristic; 2 = somewhat uncharacteristic; 3 = uncertain; 4 = somewhat characteristic; 5 = extremely characteristic.

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun.
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.
5. I try to anticipate and avoid situations where there is a likely chance I will have to think in-depth about something.

Appendix D

Individualism and Collectivism scale

Instructions: We want to know if you strongly agree or disagree with some statements. If you strongly agree, select 9 (Strongly Agree); if you strongly disagree, select 1 (Strongly Disagree). Of course, you may neither strongly agree or strongly disagree with some statements; if so, please select the number in the middle of the scale that describes the best fit.

1. I'd rather depend on myself than others.
2. I rely on myself most of the time; I rarely rely on others.
3. I often do "my own thing."
4. My personal identity, independent of others, is very important to me.
5. It is important that I do my job better than others.
6. Winning is everything.
7. Competition is the law of nature.
8. When another person does better than I do, I get tense and aroused.
9. If a coworker gets a prize, I would feel proud.
10. The well-being of my coworkers is important to me.
11. To me, pleasure is spending time with others.
12. I feel good when I cooperate with others.
13. Parents and children must stay together as much as possible.
14. It is my duty to take care of my family, even when 1 have to sacrifice what I want.
15. Family members should stick together, no matter what sacrifices are required.
16. It is important to me that I respect the decisions made by my groups.

Appendix E

The Positive and Negative Affect Schedule (PANAS)

Instructions: The following questionnaire consists of a number of words that describe different feelings and emotions. Read each item and then select the option that best describes how you are feeling right now. Remember, there are no right or wrong answers so please give us your honest opinion.

1. Interested
2. Distressed
3. Excited
4. Upset
5. Strong
6. Guilty
7. Scared
8. Hostile
9. Enthusiastic
10. Proud
11. Irritable
12. Alert
13. Ashamed
14. Inspired
15. Nervous
16. Determined
17. Attentive
18. Jittery
19. Active
20. Afraid

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