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WEIGHT-BASED DEROGATORY MEDIA: PREDICTORS OF MEDIA SELECTION, IMPACT OF EXPOSURE, AND THE MODERATING ROLE OF MALADAPTIVE APPEARANCE INVESTMENT

Katelyn Elizabeth Boersma
University of Windsor

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by

Katelyn Boersma

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APPROVED BY:

_____

T. Tylka, External Examiner
The Ohio State University

_____

S. Woodruff
Department of Kinesiology

_____

P. Fritz
Department of Psychology

_____

A. Scoboria
Department of Psychology

_____

J. Jarry, Advisor
Department of Psychology

August 29, 2017

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ABSTRACT

Building upon the work of Boersma and Jarry (2013), this research investigated the impact of experimental exposure to weight-based derogatory media on women's body image and implicit anti-fat attitudes. Drawing from Slater's (2007) reinforcing spirals theory of media selectivity and effects, a further aim of the study was to examine prospective predictors of choosing to engage with these derogatory media, as well as the effects of self-selected exposure. Additionally, maladaptive appearance investment was investigated as a moderating variable to clarify whether highly invested women would respond defensively on explicit measures of body satisfaction and estimates of current body size. Undergraduate participants ($N = 240$) completed online measures assessing hypothesized predictors of selecting weight-derogation media: implicit anti-fat attitudes, body dissatisfaction, maladaptive appearance investment, and fear of negative appearance evaluation. One to two weeks later, participants attended a lab session where they were exposed to two headlines: one providing weight-derogation content and another offering general celebrity news; and asked to choose which corresponding article they would like to read. All students were then randomly assigned to view tabloid-style pictures and articles that either denigrated female celebrities for gaining weight, or were presented non-appearance related information about the celebrities' lives. Subsequently, participants completed outcome measures assessing implicit anti-fat attitudes, state body satisfaction, state fear of negative appearance evaluation, appearance schemas activation, and discrepancies between perceived current and ideal body size. Results yielded no support for reinforcing spirals theory. Selection of weight-based derogatory media was not predicted by any of the study variables, nor were there any effects of media selection on the impact of media exposure. Consistent with predictions, women who viewed the derogatory media exhibited greater implicit anti-fat attitudes, self-ideal

discrepancies, and appearance schemas activation than did women in the neutral media condition. However, explicit reports of body satisfaction and fear of negative appearance evaluation did not differ across conditions. Further, there was no evidence that women high in maladaptive appearance investment responded more defensively than women low in maladaptive appearance investment. Instead, regardless of level of appearance investment, there was a clear disconnect in women's responding such that negative effects of exposure to weight-based derogatory media only emerged on measures that did not require participants to explicitly endorse appearance-focused concerns. This pattern of findings may be understood as resulting from the activation of emerging societal pressures to claim body satisfaction leading to more widespread defensive responding, whereas the negative impact of exposure to weight-derogation media was captured by implicit measures of anti-fat attitudes and appearance schemas activation, and figural rating scales assessing self-ideal discrepancies.

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CHAPTER I

Introduction

There is a currently a wealth of research, detailed below, that demonstrates the negative effects of exposure to thin ideal media, presented in the form of pictures and videos of ultrathin models, on women's body image. However, weight-based derogatory media, also defined below, are another type of media that serve to promote the thin ideal. Rather than glorifying thinness, weight-based derogatory media denigrate targets for failing to conform to the thin ideal. The current research investigated the impact of exposure to weight-based derogatory media on women's body image-related variables. Further, because weight-based derogatory media are not as ubiquitous as are media that glorify thinness, women usually are exposed as a result of choosing to engage with this form of thin ideal media. Thus, the current research also examined the effects of exposure to these media on women who choose it for themselves, as well as the variables that predict selection of weight-based derogatory media. Males were not included in this study given that cultural ideals for appearance are heavily gendered, and men exhibit greater muscularity-oriented body dissatisfaction, whereas women display greater thinness-oriented dissatisfaction (e.g., Karazsia, Murnen, & Tylka, 2017; Murnen, 2011).

The Negative Impact of Thin Ideal Media on Body Image

Body image is a multidimensional construct that refers to attitudes and perceptions about physical appearance. Body image attitudes include both an evaluative component and an investment component (Cash, 1994; 2011). Body image investment itself comprises two components: (a) motivational salience refers to the management of appearance for esthetic purposes, and (b) self-evaluative salience refers to the extent to which self-esteem and self-concept are reliant on appearance (Cash, Melnyk, & Hrabosky, 2004). Compared to motivational salience, self-evaluative

salience is considered to be the more maladaptive form of body image investment as it is associated with lower self-esteem and body satisfaction (Cash, Melnyk, et al., 2004; Cash, Jakatdar, & Williams, 2004), greater daily fluctuations in body satisfaction (Melnyk, Cash, & Janda, 2004; Rudiger, Cash, Roehrig, & Thompson, 2007), more negative self-schemas, and a more preoccupied attachment style than is motivational salience (Ledoux, Winterowd, Richardson, & Dorton Clark, 2010). The evaluative component of body image refers to self-appraisals of appearance, a construct that includes body dissatisfaction and self-ideal discrepancies (Cash, Melnyk, et al., 2004). Self-ideal discrepancies reflect the difference between an individual's estimation of their current body size and their subjective view of their ideal body size (Menzel, Krawczyk, & Thompson, 2011).

Body dissatisfaction among North American girls and women is so widespread that it has been considered "normative" for more than 25 years (Bearman, Presnell, Martinez, & Stice, 2006; Monteath, & McCabe, 1997; Ricciardelli & McCabe, 2004; Rodin, Silberstein, & Striegel-Moore, 1984). This pervasive discontent is of particular concern because body dissatisfaction is one of the most robust and consistent risk factors for the development and maintenance of eating disorders (Cooley & Toray, 2001; Johnson & Wardle, 2005; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006; Stice, 2001; Stice & Shaw, 2002). Sociocultural models propose that current societal standards of attractiveness emphasize the desirability of thinness at a level that most women cannot achieve. Being inundated with messages conveying the thin ideal has a negative influence on feelings, perceptions, values, and behaviours related to appearance, thereby promoting the development and maintenance of body image and eating disturbances among vulnerable persons (Hausenblas et al., 2013; Levine & Harrison, 2004). Messages promoting the thin ideal are transmitted through social sources such as family, peers, aesthetic sports, and medical professionals (Levine & Smolak, 1996; 1998; Smolak & Levine, 1996; Thompson & Stice, 2001). However, the

mass media, due to their wide reach, have been proposed as the most influential transmitters of the thin ideal (Groesz, Levine, & Murnen, 2002; Tiggemann & McGill, 2004).

Experimental studies provide the most conclusive data on the acute impact of exposure to media that glorify thinness, due to their capacity to establish causal links (Hausenblas et al. 2013). A series of meta-analyses examining the effects of exposure to thin-ideal media on women's body image concerns provide a fairly consistent picture. Groesz and colleagues (2002) conducted a meta-analysis of 25 experimental studies and found a moderate effect size (d= - .34), concluding that women experience significantly lower body satisfaction after exposure to media images of thin-and-beautiful models than after exposure to images of average-size or overweight women, or non-body images. In a meta-analysis of 77 experimental and correlational studies, Grabe, Ward, and Hyde (2008) concluded that exposure to thin-ideal media images is linked to increased body dissatisfaction, increased body image investment, and increased endorsement of disturbed eating behaviours, such as dieting, bingeing, and purging. Similarly, Want (2009) examined 47 experimental studies and found that exposure to thin ideal media images resulted in decreased appearance satisfaction among women (d= - .35, 95% CI [-.26, -.44]). Effect sizes were significantly moderated by both pre-existing concerns about appearance and instructions for participants to focus on appearance during exposure to media portrayals.

More recently, Hausenblas and colleagues (2013) examined 33 experimental studies and concluded that exposure to thin ideal images resulted in small effect sizes for decreased self-esteem and positive affect, and increased depression and anger. The results of moderation analyses indicated medium effect sizes for increased depression and body dissatisfaction among vulnerable participants, identified as women who are overweight and/or obese, high in self-objectification, low in self-esteem, or already reporting some degree of disordered eating. Although there is some variation

across these meta-analyses, there is consistent support for the hypothesis that acute exposure to thin ideal media results in small changes in eating disorder symptoms, particularly in vulnerable individuals, including women who are overweight or obese, have low self-esteem, report high levels of initial body dissatisfaction, and/or engage in disordered eating behaviours (Hausenblas et al., 2013).

Media Portrayals of "Non-Ideal" Bodies: Promotion of the Thin Ideal and Anti-Fat Attitudes

Although a sizable body of research has investigated the impact of media promoting the thin ideal, investigators have almost exclusively relied on pictures or videos of ultra-thin female bodies in their studies as examples of media that endorse this thin ideal (Fikkan & Rothblum, 2012; Grabe et al., 2008; Groesz et al., 2002). Images of thin-and-attractive women, however, are not the only means by which the mass media transmits and reinforce the thin ideal. Women classified as overweight or obese are vastly underrepresented on television and in magazines (e.g., Greenberg, Eastin, Hofschire, Lachlan, & Brownell, 2003; Kaufman, 1980; White, Brown, & Ginsburg, 1999). The lack of visibility of overweight and obese women in the media indirectly reinforces the thin ideal by conveying that a larger female form is unsightly and undeserving of attention or representation. When overweight female characters are included in the media, content analyses find that typically they are portrayed as comedic contrasts to thinner characters (Fouts & Buggraf, 1999; 2000; Fouts & Vaughan, 2002), receiving frequent derogatory comments about their weight (Fouts & Buggraf,2000; Himes & Thompson, 2007).

Beyond these fictional portrayals, female celebrities with "non-ideal" bodies are often the targets of ridicule for their weight and shape (Fikkan & Rothblum, 2012; Hoffman, 2009). Media that derogate individuals for failing to meet the thin ideal are termed weight-based derogatory media (Boersma & Jarry, 2013). The central feature of weight-based derogatory media consists of critical

comments about the weight and/or shape of the person being targeted. Implicit in this criticism is the message that weight can and should be controlled. Other common features include explicit comments chastising the individual for lacking self-control, negative comparisons between the target's current appearance and their previous thinner figure, and criticisms of and/or calls to change their diet and exercise habits. The presentational format for weight-based derogatory media typically involves pictures or video of the individual experiencing the supposed weight problem accompanied by written text or verbal commentary that mocks her current weight or shape. Media coverage of female celebrity weight gain appears in entertainment magazines, tabloid newspapers, entertainment television shows, some traditional news sources like Fox News, and the websites for all of these sources. This abundance of weight-based derogatory media also serves to reinforce the thin ideal by highlighting the negative repercussions of failing to live up to its mandate (Boersma & Jarry, 2013; Fouts & Burggraf, 1999; Himes & Thompson, 2007; Vartanian, Herman, & Polivy, 2005). Furthermore, media that devalue individuals on the basis of actual or perceived excess body weight are viewed by many researchers as not only promoting the thin ideal, but also as fostering anti-fat attitudes towards overweight and obese individuals by modeling the acceptability of weight-based derogation (Fouts & Burggraf, 2000; Himes & Thompson, 2007; Thompson, Herbozo, Himes & Yamamiya, 2005).

The Negative Impact of Exposure to Weight-Based Derogatory Media

To date only one published experimental study has investigated the effects of viewing weight-based derogatory media. Boersma and Jarry (2013) examined the impact of exposure to weight-based derogatory media on women's body satisfaction, appearance self-esteem, fear of negative appearance evaluation, and negative affect. Female undergraduates either viewed tabloid-style pictures and articles derogating average-size female celebrities for gaining weight, or the same

images accompanied by non-appearance related information. Women in the weight-based derogatory media condition reported greater fear of negative appearance evaluation than did women in the neutral media condition.

Self-evaluative salience, the more maladaptive form of body image investment, was expected to moderate reactions to weight-based derogatory media such that, after viewing, women higher in maladaptive appearance investment would report lower satisfaction with their appearance and greater fear of negative appearance evaluation than would women low in maladaptive investment. These predictions were based on previous research showing that high body image investment, particularly high self-evaluative salience, moderates the effects of exposure to commercials and images portraying thin models on body dissatisfaction, resulting in greater dissatisfaction among highly invested women (Hargreaves & Tiggemann 2002; Ip & Jarry, 2008).

Contrary to hypotheses, there was no interaction between maladaptive investment and exposure to neutral or derogatory media for fear of negative appearance evaluation (Boersma & Jarry, 2013). Instead, there was a main effect of media such that women who viewed derogatory media expressed greater fear of negative appearance evaluation than did women exposed to the neutral media. Women in the weight-based derogatory media condition also reported lower appearance self-esteem and body satisfaction than did women in the neutral media condition. However, this main effect was completely qualified by the moderating role of maladaptive appearance investment. Contrary to predictions, it was women low in maladaptive appearance investment who reported lower body satisfaction and appearance self-esteem in the weight-based derogatory media condition. Overall, women high in maladaptive investment reported lower body satisfaction and appearance self-esteem than did women low in maladaptive investment, but highly invested women's body satisfaction and appearance self-esteem did not differ across the derogatory and neutral media

conditions. Considering these findings together, women low in maladaptive appearance investment were consistent in their response to weight-based derogatory media. After reading about other women being criticized for their weight, they reported greater fear of negative appearance evaluation and less satisfaction with their current appearance than did lowly invested women who read neutral articles. In contrast, women high in maladaptive appearance investment were inconsistent in their response to the derogatory media; they reported greater fear of negative appearance evaluation, but their reports of satisfaction with their appearance were unaffected (Boersma & Jarry, 2013).

To make sense of these unexpected findings, the researchers proposed that after viewing weight-derogation media, women highly invested in their appearance for self-definition may have responded defensively when answering questions about their appearance satisfaction. This defensiveness may have been triggered by the fact that unlike media that promote the thin ideal by simply glorifying thinness, weight-derogation media deliver specific attacks on their targets' appearance. These media may elicit feelings of being similarly attacked in the readers, as the results for fear of negative appearance evaluation appear to indicate. However, for women high in maladaptive appearance investment, these attacks target a valued domain of the self. According to Feldman Barrett, Williams, and Fong (2002) when people perceive a threat to their self-esteem, they may attempt to cope through awareness lowering strategies by limiting the extent to which the threat enters consciousness, or through distortion by altering the specific content of the thoughts or feelings that arise as a result of the threat. Supporting this proposition, Kernis, Lakey, and Heppner (2008) found that undergraduate participants with self-esteem highly contingent on attaining certain outcomes or standards engaged in greater verbal defensiveness in response to stressful interview questions about their life experiences. When asked to discuss instances when they had behaved poorly, individuals with greater contingent self-worth responded in ways that demonstrated limited

awareness of negative information by disclosing very little negative self-relevant information despite prompting, and/or distorted the negative content to limit its impact by blaming others or using social norms to justify negative behaviour. Kernis et al. (2008) concluded that individuals with highly contingent self-esteem might respond to self-esteem threats with increased defensiveness because they actually are more threatened, and they are attempting to maintain or bolster whatever self-esteem they have.

In Boersma and Jarry's (2013) study, the self-esteem threat presented in the form of weight-based derogatory media may have triggered defensive responses from women whose self-worth is highly contingent on physical appearance, prompting them to preserve self-esteem by refraining from reporting decreases in body satisfaction and appearance self-esteem. Conversely, women with low maladaptive appearance investment may have experienced minimal self-esteem threat from the derogatory media and thus, may not have needed to respond defensively when answering questions about their body satisfaction.

Media that glorify thinness and/or denigrate fat also have been hypothesized to both reflect and promote the social acceptability of anti-fat attitudes and of weight-based discrimination (Himes & Thompson, 2007; Lin & Reid, 2009). Drawing on these hypotheses, Boersma's (2011) master's thesis also investigated the impact of exposure to weight-based derogatory media on explicit anti-fat attitudes, although these results were not included in the subsequent publication based on this research (Boersma & Jarry, 2013). Undergraduate women in the weight-based derogatory media condition were expected to report greater explicit anti-fat attitudes than would women in the neutral media condition. However, contrary to predictions, women in the weight-based derogatory media condition reported lower anti-fat attitudes than did women in the neutral media condition. Research on the relationship between implicit and explicit anti-fat attitudes, published after data collection for

Boersma's (2011) master's thesis had finished, was used to explain the surprisingly lower levels of explicit anti-fat attitudes among women in the weight-based derogatory media condition. Although explicit anti-fat attitudes are consciously held, with endorsement subject to modification based on the prerogative of the reporter, implicit anti-fat attitudes are automatic and outside of conscious control (Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003). Brochu, Gawronski, and Esses (2011), found that higher implicit anti-fat attitudes were related to lower explicit anti-fat attitudes among male and female undergraduates who endorsed personal goals of appearing non-prejudiced, and who perceived the overweight to be the targets of systematic discrimination. However, among participants who did not endorse both a goal of appearing non-prejudiced and the belief that overweight persons are targets of discrimination, implicit anti-fat attitudes were positively related to explicit anti-fat attitudes. Boersma (2011) suggested that exposure to the weight-based derogatory media may have temporarily increased participants' goals of appearing nonprejudiced (both to themselves and to others), as well as their perceptions of overweight individuals as the targets of discrimination. Consequently, exposure to weight-based derogatory media may have elicited greater implicit anti-fat attitudes, but lower explicit reports of anti-fat attitudes. Nevertheless, because participants' implicit anti-fat attitudes were not assessed, the impact of weight-based derogatory media on implicit anti-fat attitudes remains uninvestigated.

Limitations of Research on the Effects of Weight-Based Derogatory Media

Although Boersma and Jarry's (2013) study provides important initial findings on the effects of exposure to weight-based derogatory media, their research contains several limitations that informed the direction of this study. First, the experimental manipulation itself was artificial in nature, with participants randomly assigned to study either derogatory or neutral tabloid-style articles for a fixed amount of time. In reality, some women choose to engage with weight-based derogatory

media content, whereas others actively avoid these messages. During the debriefing, numerous women expressed how they are offended by this type of media and avoid media that derogate women. In contrast, other women reported that they enjoyed reading the derogatory tabloid articles and regularly seek out media of this type. Because the element of personal choice was not taken into consideration, it was not possible to understand how weight-based derogatory media specifically impacts the women of greatest interest – those who actually choose to engage with these media. Further, because media selection was not investigated, determining the variables that increase the likelihood of selecting weight-based derogatory media was not possible.

A further limitation of Boersma and Jarry's (2013) research is that it did not include a measure that could be used to tease apart whether highly invested women's reports of body satisfaction in the weight-derogation condition were truly defensive or reflective of genuine responding. This was because they had predicted that highly invested women would openly report experiencing greater dissatisfaction than would lowly invested women after viewing weight-derogation media, similar to findings for highly invested women viewing media depicting thin models in other experimental studies (Hargreaves and Tiggemann 2002; Ip & Jarry, 2008).

A final limitation of the existing research on weight-based derogatory media is the exclusive reliance on explicit measures of anti-fat attitudes (Boersma, 2011). In light of the findings from Brochu and colleagues (2011) reporting the relationship between explicit and implicit anti-fat attitudes can vary substantially depending upon participants' motivations when responding to explicit questions, including an implicit measure of anti-fat attitudes was critical to determine the effects of weight-based derogatory media on attitudes towards individuals with perceived excess bodyweight.

Research Questions

Building on the research conducted by Boersma and Jarry (2013) and Boersma (2011), four primary research questions formed the basis for the current study.

Impact of selecting weight-based derogatory media

The first question is: What is the impact of exposure to weight-based derogatory media on women who select these media for themselves? As mentioned above, one limitation of the previous study was that it did not take media selection processes into consideration. Unlike images of thin models, which are pervasive across various types of media, making a certain degree of exposure nearly inescapable, viewing weight-based derogatory media requires some level of active engagement, such as scanning a tabloid featuring "Worst Celebrity Beach Bodies" while in line at the supermarket, or searching online to find out which celebrities are "getting fat." There is certainly an element of choice inherent in reading or watching weight-based derogatory media that is not captured in a forced experimental exposure. The current study is the first experimental investigation of thin ideal media to move beyond the operationalization of women as passive consumers to consider whether self-selection impacts the effects of media exposure.

Predictors of selecting weight-based derogatory media

The second research question, intrinsically linked to the first, is: What individual differences predict selection of weight-based derogatory media? Although researchers investigating media that glorify thinness have proposed potential reasons to explain why women continue to seek these media (e.g., viewing thin models may induce a pleasant "thin fantasy" among some women; Mills, Polivy, & Tiggemann, 2002), previous research has not investigated variables that prospectively predict greater engagement with thin ideal media. Thus, the current study is also the first to attempt to identify variables that increase the probability of engaging with weight-based derogatory media, a

subtype of thin ideal media.

At the outset of this research, the body image literature offered no theoretical model to synthesize the process of media selection and media effects into a comprehensive framework that would allow for the formulation of conceptually grounded hypotheses. Looking outside of this literature, communications theory filled this gap (Slater, 2007). Slater's reinforcing spirals theory of media selectivity and effects is outlined in the section below, and was used to form specific hypotheses about which variables should predict selection of weight-based derogatory media, and how women who select weight-based derogatory media for themselves would be impacted by exposure. Prior to proceeding, however, there are two further research questions that have emerged from the preliminary work on the effects of weight-based derogatory media.

Clarifying defensive responding

The third research question of interest in the current work is: Following exposure to weight-based derogatory media, do women high in maladaptive appearance investment truly respond defensively to questions about their body satisfaction? As mentioned above, another limitation of Boersma and Jarry's (2013) research was that they did not include measures that could have provided support for their interpretation of defensive responding among women high in maladaptive appearance investment. Thus, the current study assessed both current and ideal ratings of body size using the Body Image Assessment Scale – Body Dimensions (BIAS-BD; Gardner, Jappe, & Gardner, 2009), in conjunction with ratings of body satisfaction, to clarify whether women high in maladaptive appearance investment did in fact respond defensively to questions about body satisfaction following exposure to weight-based derogatory media. The rationale behind the use of this measure for the purpose of clarifying defensive responding is outlined in the section on maladaptive appearance investment as a moderating variable.

Impact of weight-based derogatory media on implicit anti-fat attitudes

The final research question addressed in this study is: What is the impact of weight-based derogatory media on implicit anti-fat attitudes? As noted above, a limitation of previous research was the exclusive reliance on an explicit measure of anti-fat attitudes (Boersma, 2011). Thus, the current study included a measure of implicit anti-fat attitudes in order to determine whether exposure to weight-based derogatory media results in increased implicit anti-fat attitudes.

Reinforcing Spirals Theory of Media Selectivity and Media Effects

Slater's (2007) reinforcing spirals theory posits that the attitudinal and behavioural consequences of media exposure influence the subsequent selection of, and attention to, media content thereby strengthening the effects of repeated media exposure over time. This ongoing process of the effects of media exposure entraining subsequent selection of similar media content can be conceptualized as a reinforcing spiral of influence, or a positive feedback loop.

Within this spiralling process, individual difference variables such as disposition, prior experience, mood, ideology, social influences, and social identity influence choice of media content, channel, and genre (Zillman and Bryant, 1985). Further, the individual differences that influence media-use are conceptualized as endogenous to individuals and subject to the influence of prior causal variables, although the theory does not specify the exact nature of the latter. When an individual engages with a particular type of media, the cognitive or behavioural effects of media use are in turn expected to increase subsequent engagement with similar media. Over time, continued engagement with personally relevant media has a cumulative impact, with repeated exposure further increasing the salience or accessibility of attitudes and beliefs promoted therein, resulting in even greater likelihood of seeking out similar media, as well as in interpersonal communication experiences that support these attitudes and beliefs. Additionally, Slater emphasizes the importance

of moderating variables, such as dispositional vulnerabilities or environmental factors, which may intensify or dampen the spiralling process of media selectivity and effects. Slater recommends investigating media selectivity and media use effects within the same study, noting that the primary objective of the reinforcing spirals theory is to encourage researchers to incorporate media selection processes, which are often ignored, into studies of media effects.

The mutually reinforcing process of media selectivity and effects is exemplified in research on violent media content and adolescent aggressiveness. For example, Slater, Henry, Swaim, and Anderson (2003) found that use of violent media content was prospectively predictive of greater adolescent aggressiveness, and aggressiveness also prospectively predicted greater use of violent media content. Thus, use of violent media content increased adolescent aggressiveness, and predicted subsequent engagement with violent media content. Using this same data set, Slater, Swaim, Henry, and Cardador (2004) found that the reciprocal relationship between aggressiveness and use of violent media content was greater among vulnerable youth who were high-sensation seekers or had a history of being bullied.

Applying reinforcing spirals theory to the current research, the exact variables that are impacted by exposure to weight-based derogatory media were expected to prospectively predict women's selection of weight-based derogatory media. For example, Boersma and Jarry (2013) found that women who viewed weight-based derogatory media reported greater fear of negative appearance evaluation than did women in the neutral media condition. Accordingly, as an outcome of exposure to weight-based derogatory media, greater fear of negative appearance evaluation also should predict selection of weight-based derogatory media. Given that there has been only one previous experimental investigation of the effects of weight-based derogatory media (Boersma & Jarry, 2013), the effects of exposure to weight-based derogatory media had only been examined for a

few body image-related variables. Consequently, other variables that had not been tested as outcomes of exposure to weight-based derogatory media, but were expected to be impacted by exposure to such media based on existing research, also were tested as predictors of selecting weight-based derogatory media. The rationale for the inclusion of each variable as a predictor of selecting weight-based derogatory media is outlined in the sections below. The successful prospective prediction of engagement with weight-based derogatory media by these variables would provide support for Slater's (2007) proposition that the specific effects of media use foster further engagement with similar media.

Reinforcing spirals theory also provided direction about how women who self-select weight-based derogatory media were likely to be affected, compared to women who are randomly assigned to view these media. Specifically, reinforcing spirals theory predicts cumulative effects of self-selected media exposure as the messages promoted within the selected media become increasingly salient. Women who voluntarily choose weight-based derogatory media are engaging in this spiralling process of media selection and effects and, therefore, were expected to exhibit more pronounced outcomes on the variables of interest than women who were assigned to view the derogatory media. Thus, if women who viewed weight-based derogatory media after self-selecting them were more negatively impacted than women who were assigned to view them, this would provide further support for the cumulative effects of self-selected media exposure that are posited by reinforcing spirals theory (Slater, 2007).

Finally, reinforcing spirals theory emphasizes the importance of identifying moderating variables that intensify or dampen the impact of self-selected media exposure. Research by Boersma and Jarry (2013) has already identified maladaptive appearance investment as an important moderator of the effects of exposure to weight-based derogatory media. However, maladaptive

appearance investment had not been tested as a moderator of the effects of *self-selected* exposure. If maladaptive appearance investment emerged as an important moderator of the reinforcing spirals process, it was anticipated that it should interact with self-selected exposure to weight-based derogatory media to impact the body image-related outcome variables. The exact nature of the predicted interactions for each outcome variable was further predicted to depend upon whether women high in maladaptive appearance investment responded defensively. For the sake of clarity, in the sections below, each outcome variable is initially considered in terms of predicted un-moderated main effects. Specific hypotheses for how maladaptive appearance investment was expected to impact the effects of choosing to view weight-based derogatory media are articulated subsequently in the section on maladaptive investment as a moderator. The section on maladaptive investment as a moderator also outlines how body satisfaction was assessed in an effort to elucidate whether highly invested women responded defensively following exposure to weight-based derogatory media.

Predictors and Outcomes of Exposure to Weight-Based Derogatory Media

Body dissatisfaction

Part of the evaluative component of body image, body dissatisfaction is defined as negative subjective appraisals of one's body, including weight and shape (Stice & Shaw, 2002). As noted previously, increased body dissatisfaction is a well-documented outcome of exposure to thin-ideal media, presented in the form of video and still images of ultra-thin models (Grabe et al., 2008; Groesz et al., 2002; Hausenblas et al., 2013; Want, 2009). Lower body satisfaction also was found by Boersma & Jarry (2013) to be an outcome of exposure to weight-based derogatory media. However, this main effect was qualified by an interaction such that it was only women low in maladaptive appearance investment who reported lower body satisfaction after being exposed to weight-derogation. Given the evidence supporting body dissatisfaction as an outcome of exposure to

thin-ideal media generally, and weight-based derogatory media in particular, drawing from the reinforcing spirals theory of media selectivity and effects (Slater, 2007), body dissatisfaction was hypothesized to predict voluntary engagement with weight-based derogatory media.

To date, no previous published studies have investigated whether body dissatisfaction prospectively predicts selection of thin-ideal media, or weight-based derogatory media more specifically. However, there is evidence that body dissatisfaction predicts engagement in fat talk (Arroyo & Harwood, 2012; Salk & Engeln-Maddox, 2012). Indeed, reinforcing spirals theory not only posits that the cognitive and behavioural outcomes of media exposure should predict continued selective exposure to those media, it also predicts greater engagement in interpersonal communications that reflect and reinforce the attitudes and beliefs promoted in those media (Slater, 2007). Fat talk can be considered an example of such communication.

Fat talk is a term coined by Nichter and Vuckovic (1994) to refer to women's ritualistic conversations about their own and other people's bodies. Fat talk conversations include negative comments about one's own and other people's weight, shape, and appearance, fears about gaining weight or being out of shape, the best ways to eat and exercise, and how one's own eating and exercise habits compare to those of others (Arroyo & Harwood, 2012; Nichter, 2000; Ousley, Cordero, & White, 2008). The majority of fat talk is negative, usually heard in social groups of females of average weight, and focuses primarily on the ways in which one's body fails to live up to the thin ideal (Britton, Martz, Bazzini, Curtin, & LeaShomb, 2006; Schlenker, 1985). Although most negative comments in fat talk are self-focused, when one average weight woman complains about her size to another woman of a similar or larger size, the statements effectively comment on both women's weight, implicitly conveying that the second woman also should feel dissatisfied with her body (Salk & Engeln-Maddox, 2012). In this way, fat talk is quite similar to weight-based

derogatory media. In both, negative evaluation based on perceptions of failure to meet the thin ideal takes place, but the criticisms reach beyond the target, calling on the listener or reader to consider how these remarks relate to the self, and unless this reader/listener considers that they do meet the thin ideal, the implication is that they too should be dissatisfied with their body as it is wanting.

Arroyo & Harwood (2012), utilizing Slater's (2007) reinforcing spirals framework, conducted two studies to understand both the causes and consequences of fat talk. The researchers hypothesized that there would be mutually reinforcing effects between fat talk and body image concerns. In both studies undergraduate men and women completed close-ended scales reporting their use of fat talk, body satisfaction, perceived pressure to be thin, self-esteem, and depression. Conducted across a 3-week span, Study 1 found that fat talk prospectively predicted lower body satisfaction and greater depression, but fat talk was not an outcome of body dissatisfaction or depression. However, Study 1 suffered from low power and failed to distinguish between engaging in fat talk and hearing it. Study 2, conducted across a 2-week span, found that engaging in, but not hearing, fat talk comments prospectively predicted higher levels of depression and greater perceived pressure to be thin. Further, body dissatisfaction emerged as the only significant predictor of actively engaging in fat talk. The researchers concluded that their results supported the bidirectional influence of fat talk across the two studies, such that fat talk predicted greater body dissatisfaction and negative mental health outcomes in Study 1, and greater body dissatisfaction also predicted more engagement in fat talk in Study 2.

Salk and Engeln-Maddox (2012) experimentally investigated the effects of hearing fat talk on women's likelihood of engaging in fat talk, as well as on state body dissatisfaction, guilt, and sadness. Under the guise of a discussion group about advertisements, undergraduate women unknowingly accompanied by two confederates were exposed to a magazine advertisement featuring

a thin model. Participants then heard either both confederates engage in fat talk, neither confederates engage in fat talk, or one confederate engage in fat talk that was subsequently challenged by the second confederate. No participants engaged in fat talk in the absence of fat talk among the confederates. However, hearing a confederate fat talk increased the likelihood that participants would engage in fat talk, particularly when the fat talk was not challenged. Engaging in fat talk increased participants' state body dissatisfaction and guilt, even after controlling for trait body dissatisfaction. Additionally, participants who reported higher trait body dissatisfaction at pre-test were more likely to engage in fat talk. The researchers concluded that women with pre-existing body dissatisfaction are the most vulnerable to the effects of fat talk and are the most likely to engage in fat talk. Further, when they do engage in fat talk, these women exacerbate their own body dissatisfaction. These findings are consistent with those of other studies finding associations between body dissatisfaction and engagement in fat talk (Clarke, Murnen, & Smolak, 2010; Corning & Gondoli, 2013; Rudiger, 2010). Considered together, this research suggests that, similar to the predictions made for weight-based derogatory media, fat talk is a reciprocal process with cumulative effects such that engaging in fat talk is related to increased body dissatisfaction, and body dissatisfaction is a predictor of engaging in fat talk.

Although there are similarities between fat-talk and weight-based derogatory media, the interpersonal nature of fat talk presents a clear difference between the two. Motivations for body-dissatisfied individuals to engage in fat talk have not been investigated to date, but researchers have hypothesized that body-dissatisfied women desire to engage in comparisons and receive feedback from others in a misguided effort to cope with their dissatisfaction (Arroyo & Harwood, 2012; Corning & Gondoli, 2012). Of course, engaging with weight-based derogatory media cannot provide the same type of individualized interpersonal feedback, but it does offer societal messages about

what is considered unappealing when it comes to weight and shape. This is exactly the type of information that was expected to be of interest to women high in body dissatisfaction. Vitousek and Hollon's (1990) cognitive theory of eating disorders posits that individuals with body image disturbances selectively attend to, appraise, and recall information that is consistent with their negative evaluation of their body. From this view, it would make sense that body dissatisfied women would be more likely to engage with media presenting negative appraisals of women's bodies. In support of this, research on attentional biases with nonclinical samples of Chinese undergraduate women found that participants who were more dissatisfied with their weight had a reduced capacity to disengage their attention from pictures of both thin and overweight women, as well as from fat and thin words (Gao, Li, Yang, Wang, Jackson, & Chen, 2013; Gao, Wang, Jackson, Zhao, Liang, & Chen, 2011). Gao et al. (2013) concluded that a reduced capacity to disengage from body-related information among weight dissatisfied women may lead to an exacerbation of body dissatisfaction. This conclusion, which is consistent with reinforcing spirals theory (Slater, 2007), mirrors the hypotheses of the current study. Women high in body dissatisfaction, when presented with a choice of media, were expected to not disengage their attention from salient weight-related information and to select the weight-based derogatory media. Further, the resultant media exposure was predicted to lead to greater body dissatisfaction.

Fear of negative appearance evaluation

Fear of negative appearance evaluation (FNAE) is a conceptually unique aspect of body image (Lundgren, Anderson, & Thompson, 2004). It can be defined as apprehension about being negatively judged on the basis of one's physical appearance (Thompson & Stice, 2001). The FNAE Scale (FNAES; Lundgren et al. 2004) was developed through adapting the more generic Fear of Negative Evaluation Scale (FNES Watson & Friend, 1969). Unsurprisingly, the FNAES is highly

correlated with the general FNES (r=.78, p <.01), but has 38% unique variance. FNAE also accounts for unique variance beyond general fear of negative evaluation in predicting negative feelings about body size and shape, short-term successful caloric restriction, and chronic unsuccessful dieting (Lundgren et al., 2004). Further, unlike the Social Physique Anxiety Scale (SPAS; Hart, Leary, & Rejeski, 1989) which measures anxiety about negative evaluation of one's physique, the FNAES is uncorrelated with BMI (Boersma & Jarry, 2013; Lundgren et al. 2004). This is beneficial because it means that concerns about appearance-based evaluation, as assessed by the FNAES, are not simply attributable to the size of the individual responding to the questions. If scores on the FNAES were strongly positively correlated with BMI, responses might simply reflect overweight and obese respondents' legitimate concerns about the potential impact of widespread anti-fat attitudes (Brochu & Morrison, 2007).

Although FNAE has not been investigated as an outcome variable in other experimental studies of exposure to thin ideal media, Boersma and Jarry (2013) assessed FNAE as a dependent variable following recognition that, unlike media that simply glorifies thinness, weight-based derogatory media possesses the critical added dimension of explicitly criticising women on the basis of weight and shape. Consequently, Boersma and Jarry (2013) predicted that being exposed to negative evaluations of other women would impact viewers by increasing their fears of being similarly negatively evaluated on the basis of appearance. The researchers found that, regardless of level of maladaptive appearance investment, exposure to weight-based derogatory media resulted in greater FNAE. Following this finding I predicted that, in the current study, exposure to weight-based derogatory media also would result in greater FNAE than would exposure to neutral media, regardless of level of maladaptive investment in appearance.

Given that greater FNAE has been documented as an outcome of exposure to weight-based derogatory media, and once again drawing on Slater's (2007) theory of media selectivity and effects, FNAE also was expected to be a predictor of engaging with such media. There are no previous studies investigating FNAE as a predictor of selecting thin ideal media. However, logically, it makes sense that women with greater FNAE would find information about other women being judged on their appearance to be both threatening and relevant. Indeed, these media provide specific details about the aspects of appearance that may be the targets of negative scrutiny, while at the same time reinforcing the plausibility of a feared scenario. Thus, it was anticipated that weight-based derogatory media should be highly salient to women with greater FNAE, decreasing the likelihood that women would ignore or turn away from these media when the media are available. Research on attention to threatening stimuli in subclinical social anxiety provided some support for this proposition (Buckner, DeWall, Schmidt, & Maner; 2010; Moriya & Tanno, 2011).

Specifically, individuals with social anxiety are believed to attend to social threats more than do persons without social anxiety, which makes them more sensitive to cues signaling possible negative evaluation (Buckner et al., 2011; Rapee & Heimberg, 1997). Attentional biases to signs of negative evaluation are thought to play etiological and/or maintaining roles in social anxiety (Buckner et al., 2010; Rapee & Heimberg, 1997). Using a nonclinical sample of male and female undergraduates, Buckner and colleagues (2010) found that, in the absence of a direct social exclusion threat, individuals high in general fear of negative evaluation (a core component of social anxiety) allocated their attention preferentially to socially threatening stimuli. Moriya and Tanno (2011) investigated attentional disengagement from threatening social cues in a nonclinical sample of male and female Japanese undergraduates. They found that individuals high in general fear of negative evaluation exhibited impaired attentional disengagement from threatening cues and individuals low

in fear of negative evaluation exhibited no such impairment. These results are consistent with a large body of research indicating that anxious individuals demonstrate difficulty disengaging attention from threatening stimuli (Cisler & Koster, 2010). Taken together, these findings provided support for the hypothesis that individuals high in FNAE would be more likely to attend to available weight-based derogatory media when they were given a choice of what media to engage with, as these media also provide information that is both threatening and highly relevant to individuals who are concerned about being negatively evaluated on the basis of appearance.

Implicit anti-fat attitudes

Negative attitudes towards overweight and obese persons are widespread and expressed by people of varying ages and body sizes (Brochu & Morrison, 2007; Cramer & Steinwert, 1998; Crandall, 1994; Morrison & O'Connor, 1999; Schwartz, Vartanian, Nosek, & Brownell, 2006; Wang, Brownell, & Wadden, 2004). Beyond attitudes, researchers have found that overweight individuals experience discrimination in domains such as employment, education, health care, and interpersonal relationships (Puhl & Brownell, 2001; Puhl & Heuer, 2009). Media that denigrate fat have been hypothesized to both reflect and promote the acceptability of anti-fat attitudes and of weight-based discrimination (Himes & Thompson, 2007; Lin & Reid, 2009).

Given the findings from Brochu and colleagues (2011) demonstrating that the relationship between explicit and implicit anti-fat attitudes can vary significantly depending upon participants' motivations when responding to explicit questions, the current study focused solely on investigating the relationship between implicit anti-fat attitudes and exposure to weight-based derogatory media. Understanding this relationship is of particular importance because implicit anti-fat attitudes have been found to predict behaviour (Agerström & Rooth, 2011; Bessenoff & Sherman, 2000). In a field experiment, Agerström and Rooth (2011) investigated whether implicit anti-fat attitudes, measured

by the Implicit Association Test (IAT), could predict discrimination against the obese in hiring practices. Fictitious job applications that included a facial photograph of either an obese or a normal-weight applicant were submitted to real job openings posted by the Swedish Employment Agency. For each job posting, applications from one obese and one normal-weight applicant were submitted. Applications were matched on credentials, and photographs of obese and of average-weight persons were matched on attractiveness. Several months after interview decisions were made, hiring managers completed an IAT to assess anti-fat attitudes, and an explicit measure of weight-related hiring preferences. The researchers found that, although explicit reports about weight-related hiring preferences were unrelated to interview decisions, hiring managers with stronger implicit anti-fat attitudes were less likely to invite an obese applicant for a job interview. In another study, Bessenoff and Sherman (2000) found that individuals with greater implicit anti-fat attitudes chose to sit further away from an overweight woman. In contrast, explicit anti-fat attitudes were unrelated to seating choice. Thus, research suggests that implicit anti-fat attitudes can predict behaviour even in the absence of explicitly reported anti-fat attitudes.

Although the effects of exposure to weight-based derogatory media on implicit anti-fat attitudes previously had not been investigated, evidence suggests that implicit anti-fat attitudes can be either increased or decreased in response to explicit messages about the controllability of weight (O'Brien, Puhl, Latner, Mir, & Hunter, 2010; Teachman et al., 2003). However, for the purpose of this study the most interesting results pertain to research indicating that implicit anti-fat attitudes are increased by messages about the controllability of weight. Teachman and colleagues (2003) investigated whether implicit anti-fat attitudes could be modified by information about the causes of obesity, or stories about obese persons experiencing discrimination. In a community-based sample of adults, the researchers found that after participants read an article reporting that overeating and

lack of exercise are the main causes of obesity, they exhibited greater implicit anti-fat attitudes than both participants who did not read an article and participants who read an article highlighting genetic contributions to obesity. Contrary to predictions, participants who received information that genetics is a primary contributor to obesity did not exhibit lower implicit anti-fat attitudes. Further, across several experiments, efforts to induce empathy with stories of discrimination towards obese people only resulted in lower implicit bias among overweight participants. Implicit bias among average weight participants was unaffected.

In another experiment, O'Brien and colleagues (2010) explored whether providing undergraduate health students with curriculum about causes for obesity would impact their implicit and explicit anti-fat attitudes. In the prejudice reduction condition, participants took part in tutorials that presented evidence on uncontrollable genetic and environmental contributors to obesity. Another condition, hypothesized to increase anti-fat attitudes, presented students with information about the controllable reasons for obesity (i.e., diet/exercise). Finally, a control condition focused on alcohol use in young people. Repeated measures analyses demonstrated that the condition emphasizing personal responsibility for obesity resulted in a 27% increase in implicit anti-fat attitudes, but had no impact on explicit anti-fat attitudes. The prejudice reduction condition resulted in decreases in both implicit and explicit anti-fat attitudes.

Similar to explicit messages about weight controllability, weight-based derogatory media also transmit the message that weight can and should be controlled, but do so by criticizing women for their current weight. Consequently, I predicted that following exposure to weight-based derogatory media, women would exhibit greater implicit anti-fat attitudes. Further, following from reinforcing spirals theory, women with greater implicit anti-fat attitudes were expected to be more likely to

engage with weight-based derogatory media, as such media messages are consistent with these consumers' internal attitudes.

Maladaptive Appearance Investment/ Appearance Schematicity

The investment component of body image refers to the importance or cognitive-behavioural salience of one's appearance (Cash, 2002). Appearance-related self-schemas are a core facet of body image investment (Cash, Melnyk et al., 2004). Self-schemas are cognitive generalizations about the self that are developed in order to organize and direct the processing of self-related information (Cash et al., 2004; Markus, 1977). Appearance self-schemas refer specifically to cognitive structures pertaining to the "importance, meaning, and effects of appearance in one's life" (Cash & Labarge, 1996). Although nearly everyone develops appearance schemas to some extent (Markus, Hamill, & Sentis, 1987), there are individual differences in the complexity, accessibility, and importance of appearance-schemas (Hargreaves & Tiggemann, 2002). Individuals with highly developed appearance schemas are said to invest more strongly in their appearance, and the terms appearance investment and appearance schematicity are used interchangeably (Cash, Melnyk et al., 2004; Hargreaves & Tiggemann, 2002; Lavin & Cash, 2000). Body image investment is measured with the Appearance Schemas Inventory-Revised (ASI-R; Cash, Melnyk, et al., 2004), which assesses both the extent to which physical appearance is used to define self-worth with the self-evaluative salience sub-scale, as well as attitudes and behaviours related to improving or maintaining physical attractiveness with the motivational salience sub-scale. To remind, self-evaluative salience is considered to be a more maladaptive form of body image investment as it is associated with lower self-esteem and body satisfaction (Cash, Jakatdar, et al., 2004; Cash, Melnyk, et al., 2004), greater daily fluctuations in body satisfaction (Melnyk et al., 2004; Rudiger et al., 2007), more negative self-

schemas, and a more preoccupied attachment style than is motivational salience (Ledoux et al., 2010).

Individuals who are high in body image investment or appearance schematicity are generally hypothesized to pay more attention to, place more importance on, and preferentially process, appearance-relevant information. This, in turn, primes and activates existing appearance schemas (Altabe & Thompson, 1996; Cash & Labarge, 1996; Hargreaves & Tiggemann, 2002; Tiggemann, Hargreaves, Polivy, & McFarlane, 2004). Consistent with the view that appearance investment or schematicity impacts processing of appearance-related material, after having appearance schemas primed by being weighed in front of a mirror, appearance-schematic undergraduate women exhibited slower colour naming of words related to weight, shape, and eating than did women low in appearance schematicity (Labarge, Cash, & Brown, 1998). Appearance schematic individuals also demonstrate increased recall for appearance-related material (Altabe & Thompson, 1996; Geller, Johnston, & Madsen, 1997). In the current study, women higher in self-evaluative salience (the more maladaptive component of body image investment) were expected to exhibit selective attention to and processing of weight and shape related information by choosing to engage with weight-based derogatory media. Further, exposure to weight-based derogatory media was expected to activate women's appearance schemas.

State appearance schema activation can be assessed implicitly through the use of a word stem completion task where each stem can be completed with either an appearance-related word or a nonappearance related word (Tiggemann, Hargreaves, Polivy, & McFarlane, 2004). Although there have been few attempts to demonstrate that thin ideal media exposure actually activates appearance schemas, the available results have consistently demonstrated that exposure to pictures and video of ultrathin models results in greater appearance schemas activation. This is evidenced by a greater

production of appearance-related words on the word stem completion task following exposure to the thin ideal (Hargreaves & Tiggemann, 2002; Tiggemann et al., 2004). Similar to other thin-ideal media, exposure to weight-based derogatory media was expected to activate appearance schemas. Thus, exposure to weight-based derogatory media was predicted to result in the activation of appearance schemas, as measured with the word-stem completion task. Greater appearance schematicity or maladaptive appearance investment, measured by the self-evaluative salience sub-scale of the ASI-R, also was expected to prospectively predict selection of weight-based derogatory media. This is reflective of the spiraling process of media selectivity and effects predicted by Slater's reinforcing spirals theory, and if these results were obtained, they would provide support for the proposition that the cognitive effects of media exposure entrain engagement with those same media.

Moderators of the Effect of Exposure to Weight-Based Derogatory Media

Self-selection of media

The reinforcing spirals theory of media selection and effects postulates that ongoing self-selected media exposure has cumulative effects, increasing the salience of the chosen media messages and their impact on the individual (Slater, 2007). Following from this, I predicted that self-selection of weight-based derogatory media would act as a moderator to intensify the effects of exposure to weight-based derogatory media. Specifically, women who viewed weight-based derogatory media after self-selecting them would report lower body satisfaction and greater fear of negative appearance evaluation, implicit anti-fat attitudes, and appearance schemas activation than would women randomly assigned to view this type of media without choosing it for themselves.

Maladaptive appearance investment

In studies investigating body image investment as a moderator of the effect of experimental exposure to media depicting ultrathin models, after viewing images of thin models women higher in body image investment, particularly maladaptive appearance investment, report lower body satisfaction than do women low in body image investment (Hargreaves & Tiggemann, 2002; Ip & Jarry, 2008). Similarly, Lavin and Cash (1998) found that greater general body image investment moderated the impact of listening to an audiotape presenting research on appearance stereotyping and discrimination. Women who heard the research on appearance discrimination reported lower body satisfaction than did women who listened to a tape about television violence and aggression. However, highly invested women were especially impacted, reporting the lowest levels of body satisfaction. Considered together, these findings suggest that women who are high in body image investment in general, and maladaptive appearance investment in particular, are more vulnerable to experiencing lower body satisfaction in response to messages and images that convey the thin ideal.

As noted previously, in contrast to these findings, Boersma and Jarry (2013) found that it was women low in maladaptive appearance investment who reported lower appearance satisfaction following exposure to weight-based derogatory media, whereas highly invested women did not differ in satisfaction across the neutral or derogatory media conditions. Highly invested women's paradoxical reaction to the weight-based derogatory media was interpreted as a defense against a threat to a valued domain of the self, although the study did not include measures that could be used to directly investigate this proposed explanation. Further, at the outset of the current research, there were no validated implicit measures of body satisfaction that would permit bypassing defensive processes altogether (Menzel et al., 2011). However, a recent study on the impact of information

about body norms on ideal and current body size perception pointed to a way of identifying defensive responding.

Mills, Jadd, and Key (2012) posited that thin-ideal media exposure exacerbates women's desire to be thin by conveying the false impression that most women are in fact thin. The researchers provided undergraduate women with information about body norms by marking a "population average" on the Figure Rating Scale (Stunkard, Sorenson, & Schulsinger, 1983), which depicts a series of outline drawings of female bodies that range from extremely thin to obese. Participants were assigned to one of three conditions: a thinner body norm condition in which the "population average" was marked on the lower end of the scale, a heavier body norm condition in which the "population average" was marked on the higher end of the scale, or a no norm condition in which no "population average" was displayed. Participants then were asked to mark, on two separate rows, the silhouette on the Figure Rating Scale that best represented their current body size, followed by their ideal body size. Typically, figural drawing scales are used to capture global body dissatisfaction by calculating the discrepancy between the current and ideal body sizes (Menzel et al., 2011). However, to assess their primary hypothesis, Mills and colleagues (2012) examined the current and ideal ratings separately. As predicted, women in the thin body norm condition rated their ideal body size as significantly thinner than did women in the heavier body norm condition. Unexpectedly, exploratory analyses revealed that after controlling for BMI, women in the thin body norm condition also rated their *current* body size as thinner than did women in the heavier body norm condition. To explain this finding, the researchers suggested that in order to preserve self-esteem, participants in the thinner body norm condition defensively rated their current size as thinner, thus minimizing their discrepancy from the supposed thin "average." Unfortunately, this explanation of defensive responding was put forth as a post-hoc explanation of the unexpected reports of a thinner current

body size among women in the thin "population average" condition, and the researchers did not include a separate measure of body satisfaction that could corroborate their interpretation of defensive responding about body satisfaction. Additionally, the researchers did not include individual difference variables, such as appearance investment, that may have moderated reactions to the population norms.

In the current study, both current and ideal ratings of body size were separately assessed, in conjunction with ratings of body satisfaction, as a means to corroborate a defensive pattern of reporting about body satisfaction among women high in maladaptive investment (see Figure 1 for predictions of current and ideal body size using an ordered version of figures from the Body Image Assessment Scale – Body Dimensions; BIAS-BD). Similar to viewing a thinner "population average" on the FRS, there is nothing about weight-based derogatory media that would cause women to perceive that their current shape is truly thinner. Thus, if after viewing weight-based derogatory media women high in maladaptive appearance investment rated their current body size as thinner than women low in maladaptive appearance investment and all women in the neutral media condition while controlling for actual body size using BMI, this would provide evidence of distorted or defensive responding in their direct report of body satisfaction on the BISS. Specifically, if highly invested women's body satisfaction was truly unaffected by the derogatory media, there would be no need for them to rate their current body size as thinner than would women low in maladaptive appearance investment. However, if the derogatory media did deliver a threat to body satisfaction, having rated current body size as thinner would have prevented an increase in the discrepancy between current body size and ideal body size. The discrepancy between current and ideal ratings of body size is interpreted as representing body dissatisfaction (Menzel et al., 2011). Thus, having rated current body size as thinner would have served to prevent an increase in body dissatisfaction, thereby

preserving self-esteem in an area that is central to self-worth for women who are high in maladaptive appearance investment.

In contrast, highly invested women's ratings of ideal body size were not expected to be influenced by defensive responding, and were predicted to reveal their vulnerability to the messages presented in weight-based derogatory media, further suggesting that any reports of unchanged body satisfaction on the BISS were made defensively. Ratings of ideal body size simply reflect wishes or desires for one's body, whereas estimations of current size and reports about body satisfaction require self-evaluation, which is susceptible defensive responding to preserve self-esteem. Viewing media that draw attention to the possibility of being denigrated for being too "fat" was expected to be particularly threatening to women who use appearance to define self-worth, thereby heightening desires for thinness. As such, following exposure to derogatory media, ratings of ideal body size were predicted to be thinnest for highly invested women. However, because highly invested women in the derogatory condition were expected to report thinner current and ideal body sizes, the actual discrepancy between these body sizes was not expected to differ across the derogatory and neutral media conditions. Thus, the findings for self-ideal discrepancies were expected to replicate the results for body satisfaction on the BISS, with only lowly invested women exhibiting greater body self-ideal discrepancies in the derogatory media condition when compared to the neutral media condition.

Taking media selection into consideration was hypothesized to further demonstrate the pattern of defensive responding and greater vulnerability to weight-based derogatory media among women high in maladaptive appearance investment. Reinforcing spirals theory posits that individuals with factors that increase their vulnerability to the effects of particular media messages are more susceptible to the effects of ongoing self-selected exposure to these media (Slater, 2007).

Following from this, because defensive responding was not expected to play a role in reports of ideal body size, ideal body size was predicted to be thinnest for highly invested women who were exposed to derogatory media after selecting them for themselves. Accordingly, highly invested women who self-selected the derogatory media also were expected to respond defensively and report the thinnest *current* body size to prevent increases in self-ideal discrepancies and preserve self-esteem.

Women low in maladaptive appearance investment who self-selected the derogatory media were not expected to report a thinner *current* body size than would lowly invested women who were randomly assigned to the derogatory media. Because appearance is not critical to their self-worth they were not expected to be motivated to preserve self-esteem in this domain by adjusting their current view of their own body size to compensate for an increasingly thinner ideal body size. However, women low in maladaptive appearance investment who self-selected the derogatory media were expected to report a thinner *ideal* body size than would lowly invested women randomly assigned to view the derogatory media and women in the neutral media condition. This would result in the greatest self-ideal discrepancies among lowly invested women who self-selected weight-based derogatory media because, unlike women high in maladaptive appearance investment, they were not expected to respond defensively, resulting in invariant ratings of current body size across conditions.

To summarize, defensive responding in highly invested women would be evidenced by nonsignificant differences in reports of body satisfaction on the BISS and self-ideal discrepancies on the BIAS-BD across the neutral and derogatory media conditions, combined with thinner ratings of current and ideal body size on the BIAS-BD following exposure to weight-based derogation. The ratings of thinner current and ideal body sizes on the BIAS-BD would indicate that highly invested women were indeed impacted by exposure to weight-based derogatory media, with ratings of an ideal body size revealing their vulnerability to these media, and ratings of a thinner current body size

reflecting efforts to minimize this vulnerability by reducing the discrepancy between current and ideal body size, thereby preserving self-esteem. This pattern of findings was expected to be even more pronounced among women who viewed weight-based derogatory media after selecting them for themselves.

Maladaptive appearance investment also was examined as a moderator for the other outcome variables, but the predictions for these variables were less clear and, therefore, the analyses were exploratory. Maladaptive appearance investment has been examined as a moderator of appearance schemas activation following exposure to thin ideal media, but the interaction term was not significant (Hargreaves & Tiggemann, 2002). The researchers suggested that the word-stem completion task used to measure schema activation might only capture the simple activation of a universal appearance schema that all individuals possess. Processing differences between individuals high and low in body image investment may only emerge from the subsequent accessibility of key appearance-related concepts (e.g., assumptions about the importance of appearance) within a universal appearance schema. Thus, it remains unclear whether the word stem completion task is capable of capturing differences in schema activation between highly and lowly invested individuals. In terms of fear of negative appearance evaluation, maladaptive appearance investment did not emerge as significant moderator in Boersma and Jarry's (2013) study. Therefore, maladaptive appearance investment was not expected to emerge as a significant moderator of fear of negative appearance evaluation in the current study, but it was investigated to determine if this was a replicable finding. Finally, implicit anti-fat attitudes are correlated with greater appearance orientation ($r = .26$, $p < .01$; O'Brien, Hunter, Halberstadt, & Anderson, 2007), a construct closely related to body image investment, but the relationship between maladaptive appearance investment and implicit anti-fat attitudes remained uninvestigated. Consequently, it was unclear whether

maladaptive investment could be expected to moderate the effect of weight-based derogatory media on implicit anti-fat attitudes.

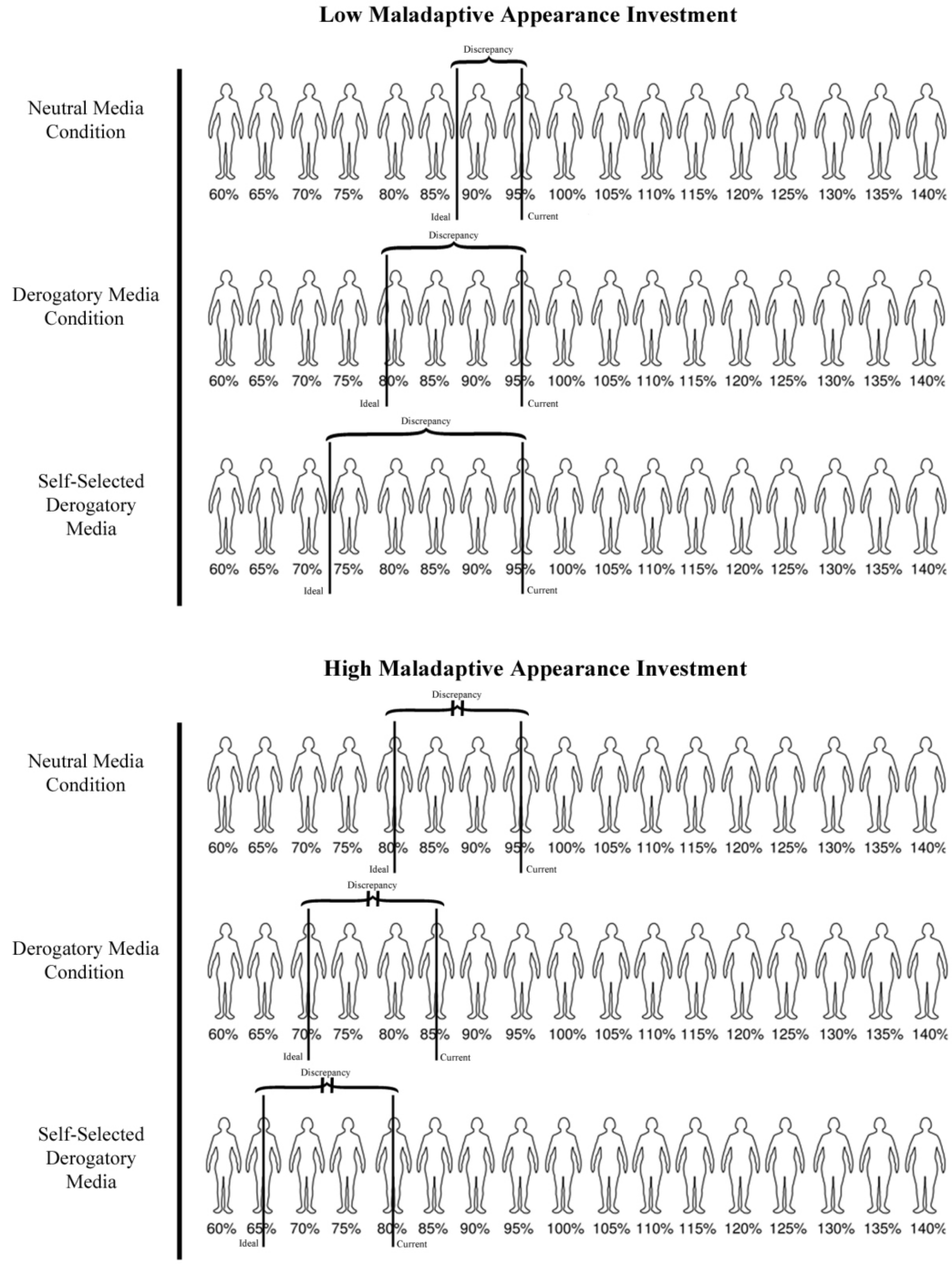

Figure 1. Predicted average group ratings on the BIAS-BD. Adapted from "Development and Validation of a New Figural Drawing Scale for Body-Image Assessment: The BIAS-BD"," by R.M. Gardner, L.M. Jappe, and L. Gardner, 2008, *Journal of Clinical Psychology, 65,* p. 117. Copyright 2008 by Wiley InterScience. Adapted with permission.

Hypotheses

Hypothesis 1 pertains to results that were expected to replicate and extend previous findings about the main effects of exposure to weight-based derogatory media, with no consideration for the process of media self-selection or the role of maladaptive appearance investment as a moderator. If hypotheses 2 and 3 emerged as predicted, they would provide support for Slater's (2007) reinforcing spirals theory of media selectivity and effects. Hypotheses 4, 5, and 6 were designed to clarify defensive responding about body satisfaction among women high in maladaptive appearance investment. Finally, hypotheses 7 and 8, if supported, would provide evidence for both reinforcing spirals theory and defensive responding among women high in maladaptive appearance investment (see Table 1).

Replicate and extend past findings

1) Compared to women in the neutral media condition, women exposed to weight-based derogatory media were expected to respond with lower state body satisfaction, greater fear of negative appearance evaluation, self-ideal discrepancies, implicit anti-fat attitudes, and appearance schemas activation.

Support reinforcing spirals theory

2) Women's selection of weight-based derogatory media would be predicted by greater body dissatisfaction, fear of negative appearance evaluation, implicit anti-fat attitudes, and maladaptive appearance investment.
3) Women exposed to weight-based derogatory media after self-selecting them would report lower body satisfaction and greater fear of negative appearance evaluation, self-ideal discrepancies, implicit anti-fat attitudes, and appearance schemas activation than would women randomly assigned to these media.

Clarify defensive responding

4) Women low in maladaptive investment were expected to report lower body satisfaction (see Figure 2) and greater self-ideal discrepancies (see Figure 3) following exposure to weight-based derogatory media, whereas women high in maladaptive appearance investment would respond defensively, and would not differ in body satisfaction or self-ideal discrepancies across the neutral and weight-based derogatory media conditions.
5) It was expected that maladaptive appearance investment would moderate the impact of weight-based derogatory media on reports of current body size (see Figure 4). Following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner current body size than would lowly invested women in the derogatory condition and women in the neutral media condition regardless of maladaptive investment. Among women low in maladaptive appearance investment, reports of current body size would not differ significantly across the neutral and weight-based derogatory media conditions.
6) It was predicted that maladaptive appearance investment would moderate the impact of weight-based derogatory media on reports of ideal size (see Figure 5). Following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner ideal body size than would lowly invested women, and women exposed to neutral media regardless of maladaptive investment.

Clarifying defensive responding and supporting reinforcing spirals theory

7) Women low in maladaptive appearance investment who viewed the derogatory media after self-selecting them were expected to report lower body satisfaction (see Figure 6) and greater self-ideal discrepancies (see Figure 7) than would lowly invested women who viewed the

derogatory media following random assignment. Women high in maladaptive appearance investment were not expected to differ significantly in body satisfaction or self-ideal discrepancies, regardless of media selection or exposure to neutral or derogatory media.

8) Women high in maladaptive appearance investment were expected to report the thinnest current (see Figure 8) and ideal (see Figure 9) body sizes following self-selected exposure to weight-based derogatory media.

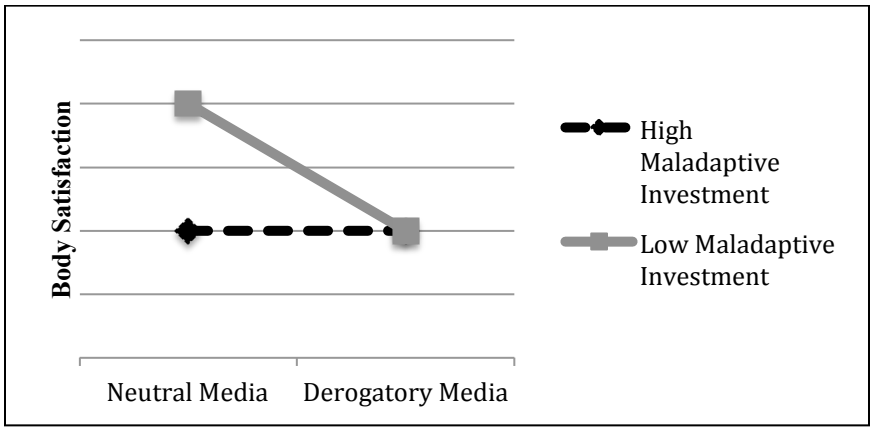

Figure 2. Hypothesis 4: Women low in maladaptive investment were expected to report lower body satisfaction in the derogatory media condition, whereas women high in maladaptive appearance investment would respond defensively and would not differ across media conditions.

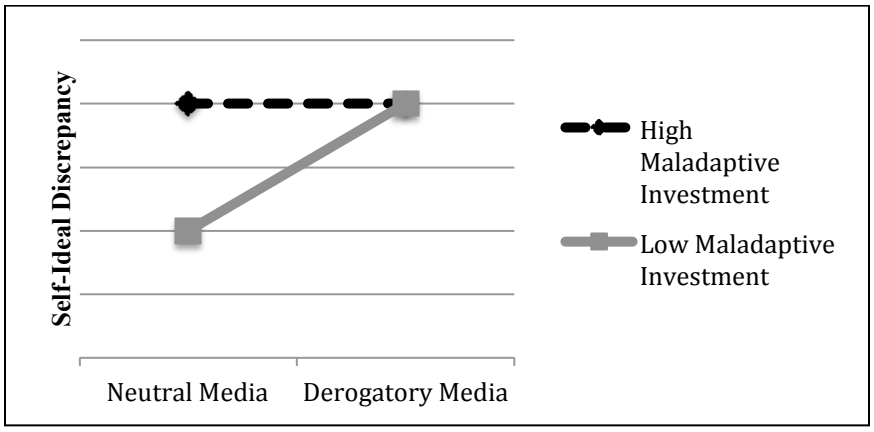

Figure 3. Hypothesis 4: Women low in maladaptive investment were expected to report greater self-ideal discrepancies following derogatory media exposure, whereas women high in maladaptive appearance investment would respond defensively and would not differ across media conditions.

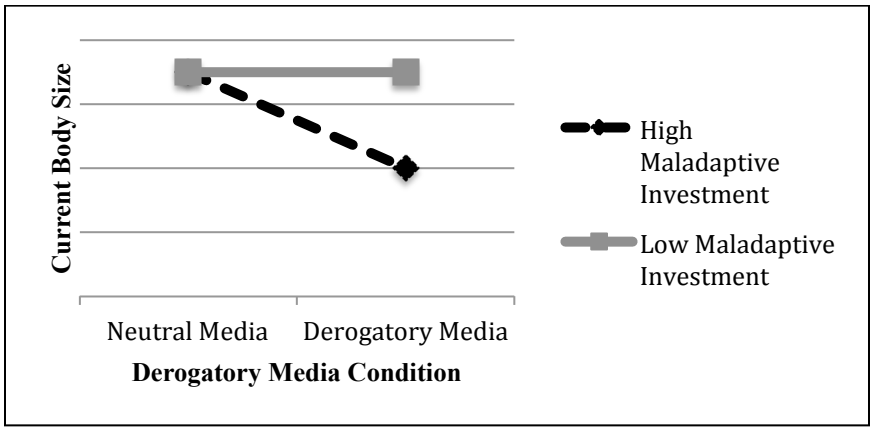

Figure 4. Hypothesis 5: Following exposure to weight-based derogatory media, women high in maladaptive appearance investment were expected to report a thinner current body size than lowly invested women in the derogatory condition and women in the neutral media condition, whereas among women low in maladaptive appearance investment, current body size would not differ significantly across media conditions.

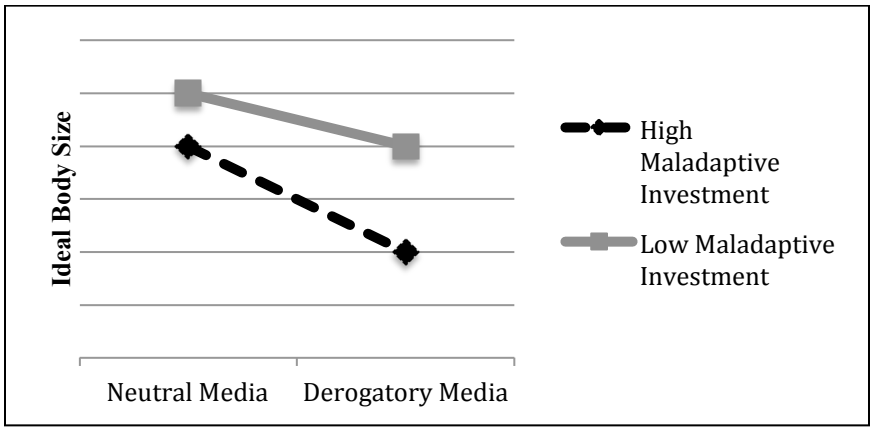

Figure 5. Hypothesis 6: Following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner ideal body size than would lowly invested women, and women exposed to neutral media, regardless of maladaptive investment.

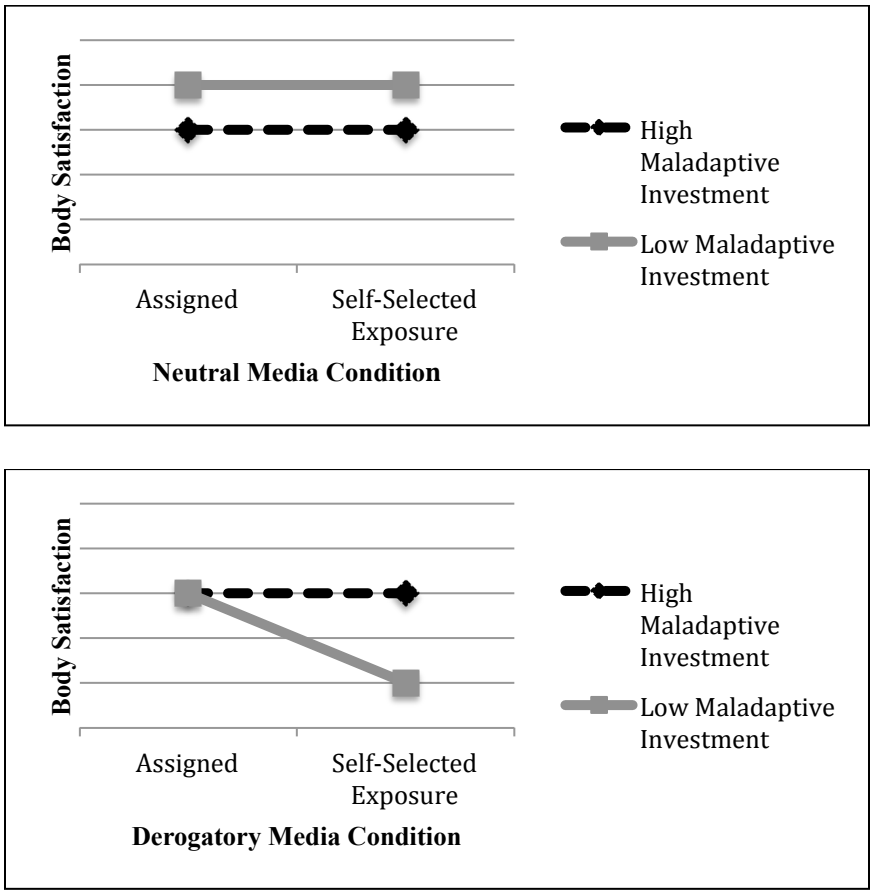

Figure 6. Women low in maladaptive appearance investment who viewed the derogatory media after self-selecting them were expected to report lower body satisfaction than would lowly invested women who viewed the derogatory media following random assignment, whereas women high in maladaptive appearance investment were not expected to differ significantly, regardless of media selection or media condition.

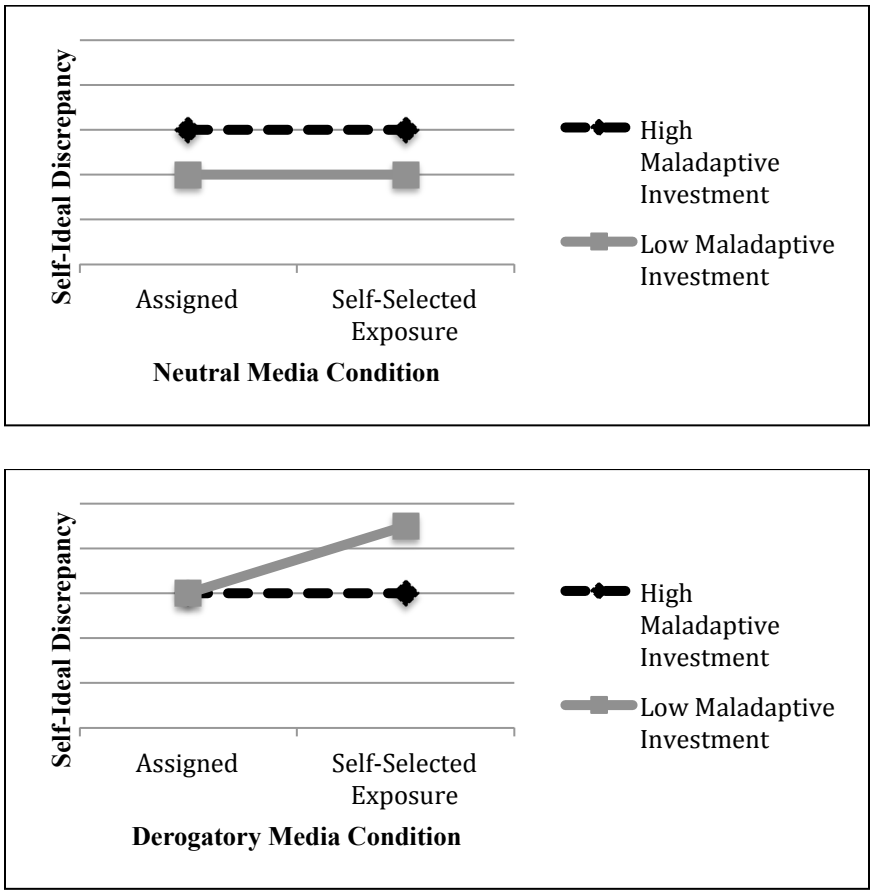

Figure 7. Hypothesis 7: Women low in maladaptive appearance investment who viewed the derogatory media after self-selecting them were expected to report greater self-ideal discrepancies than would lowly invested women who viewed the derogatory media following random assignment, whereas women high in maladaptive appearance investment were not expected to differ significantly, regardless of media selection or media condition.

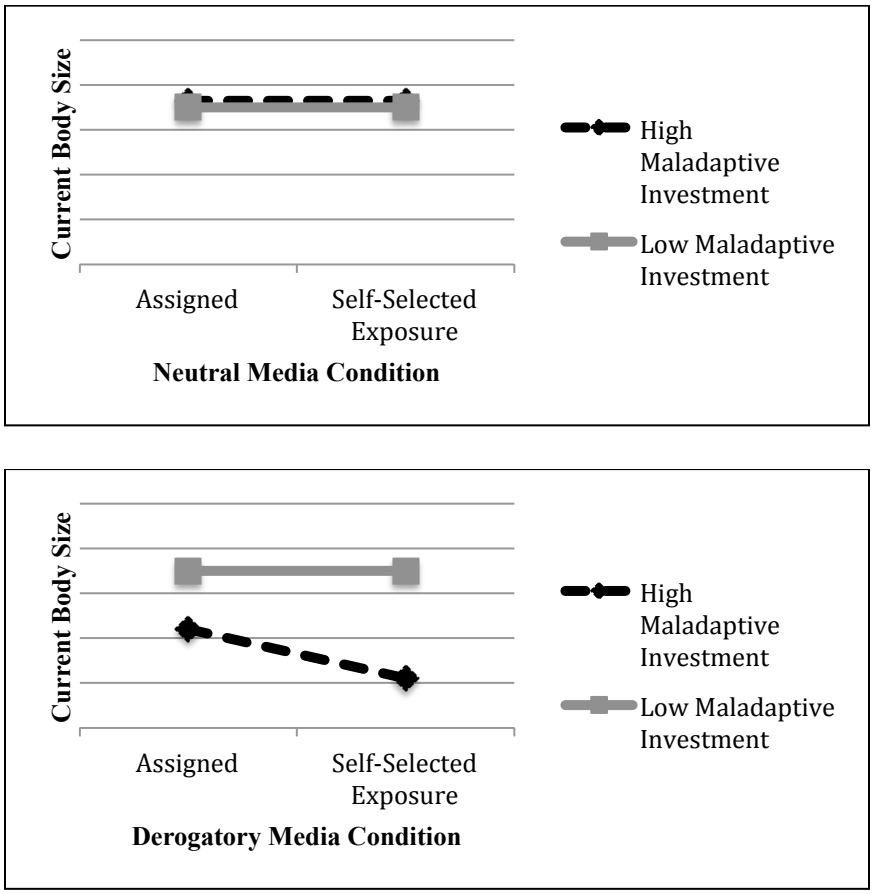

Figure 8. Hypothesis 8: Women high in maladaptive appearance investment were expected to report the thinnest current body sizes following self-selected exposure to weight-based derogatory media.

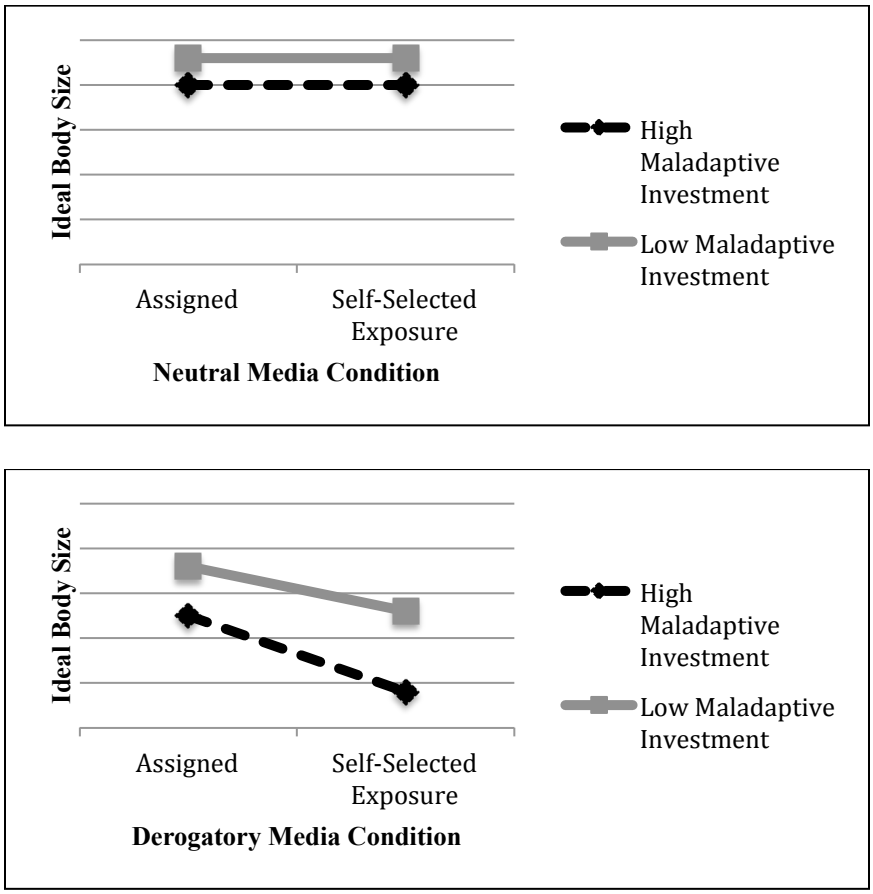

Figure 9. Hypothesis 8: Women high in maladaptive appearance investment were expected to report the thinnest ideal body sizes following self-selected exposure to weight-based derogatory media.

Table 1

Study Hypotheses

Hypotheses	Predictors	DVs	Statistical Tests
Replicate and Extend Past Findings			
1. Compared to women in the neutral media condition, women exposed to weight-based derogatory media were expected to respond with lower state body satisfaction and greater fear of negative appearance evaluation, self-ideal discrepancies, implicit anti-fat attitudes, and appearance schemas activation.	Media condition (weight-based derogatory vs. neutral media)	State body satisfaction State fear of negative appearance evaluation Self-ideal discrepancy Implicit anti-fat attitudes Appearance schemas activation	t-test in hierarchical regression for each DV
Support for Reinforcing Spirals Theory			
2. Women's selection of weight-based derogatory media was expected to be predicted by greater body dissatisfaction, fear of negative appearance evaluation, implicit anti-fat attitudes, and maladaptive appearance investment.	Trait body dissatisfaction Trait fear of negative appearance evaluation Implicit anti-fat attitudes Maladaptive appearance investment	Selection of weight-based derogatory media	Wald χ^2-tests + odds ratios in logistic regression
3. Women exposed to weight-based derogatory media after self-selecting them were predicted to report lower body satisfaction and greater fear of negative appearance evaluation, self-ideal discrepancies, implicit anti-fat attitudes, and appearance schemas activation than would women randomly assigned to these media.	Media condition (weight-based derogatory vs. neutral media) Selection of media	State body satisfaction State fear of negative appearance evaluation Self-ideal discrepancy Implicit anti-fat attitudes Appearance schemas activation	2-way interaction, hierarchical regression for each DV
Clarify Defensive Responding			
4. Women low in maladaptive investment were expected to report lower body satisfaction and greater self-ideal discrepancies following exposure to weight-based derogatory media, whereas women high in maladaptive appearance investment would respond defensively, and would not differ in body satisfaction or self-ideal discrepancies across the neutral and weight-based derogatory media conditions.	Media condition (weight-based derogatory vs. neutral media) Maladaptive appearance investment	State body satisfaction Self-ideal discrepancy	2-way interaction, hierarchical regression for each DV

Hypotheses	Predictors	DVs	Statistical Tests
5. Maladaptive appearance investment was expected to moderate the impact of weight-based derogatory media on reports of current body size. Following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner current body size than would both lowly invested women in the derogatory condition, and women in the neutral media condition. Among women low in maladaptive appearance investment, reports of current body size were not expected to differ significantly across the neutral and weight-based derogatory media conditions.	Media condition (weight-based derogatory vs. neutral media) Maladaptive appearance investment	Current body size	2-way interaction hierarchical regression
6. Maladaptive appearance investment was predicted to moderate the impact of weight-based derogatory media on reports of ideal size. Following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner ideal body size than would lowly invested women and women exposed to neutral media.	Media condition (weight-based derogatory vs. neutral media) Maladaptive appearance investment	Ideal body size	2-way interaction hierarchical regression
Defensive Responding + Reinforcing Spirals Theory			
7. Women low in maladaptive appearance investment who viewed the derogatory media after self-selecting them were expected to report lower body satisfaction and greater self-ideal discrepancies than would lowly invested women who viewed the derogatory media following random assignment. Women high in maladaptive appearance investment were not expected to differ significantly in body satisfaction or self-ideal discrepancies, regardless of media selection or exposure to neutral or derogatory media.	Media condition (weight-based derogatory vs. neutral media) Maladaptive appearance investment Selection of media	State body satisfaction Self-ideal discrepancy	3-way interaction, hierarchical regression for each DV
8. Women high in maladaptive appearance investment were predicted to report the thinnest current and ideal body sizes following self-selected exposure to weight-based derogatory media.	Media condition (weight-based derogatory vs. neutral media) Maladaptive appearance investment Selection of media	Current body size Ideal body size	3-way interaction, hierarchical regression for each DV

CHAPTER II

Pilot Study

Prior to conducting the full study, where all of the hypotheses outlined above were tested, a pilot study was conducted to address methodological considerations and to provide a preliminary test of Slater's (2007) reinforcing spirals theory of media selectivity and effects. The most critical methodological concern addressed in this pilot study was whether roughly equal numbers of participants would select the weight-based derogatory versus neutral media based on the headlines presented to them. If the vast majority of individuals selected one type of media, power to prospectively predict selection of weight-based derogatory media from participant's reports of body image-related variables would be greatly reduced. Further, predicted 2- and 3-way interactions between media selection, media condition, and maladaptive appearance investment on body image-related outcome variables also would be underpowered. Thus, a primary purpose for this pilot study was to determine whether the headlines for each condition would be selected evenly enough by participants to ensure adequate power for statistical analyses.

A second purpose of this pilot study, which was conducted online, was to provide an initial test of Slater's (2007) reinforcing spirals theory of media selectivity and effects with the media selection task. Further procedural details follow in the procedure section below. However, briefly, participants completed the measure of implicit anti-fat attitudes, as well as the other trait measures of body image that were then used in the full study (EDI-II-BD, FNAES, and ASI-R), and these measures were used to predict media selection to ensure that this analysis would have adequate power in the main study. This also provided a preliminary test of hypothesis 2 for the full study, which posited that selection of weight-based derogatory media would be predicted by greater body

dissatisfaction, maladaptive appearance investment, implicit anti-fat attitudes, and fear of negative appearance evaluation. If supported, this would provide evidence for reinforcing spirals theory.

In the event that participants' media selection was so unbalanced that analyses were underpowered, a continuous rating of interest in reading either the derogatory or neutral articles also was administered for alternate use. Thus, after selecting which article they wanted to read, participants also rated their degree of interest in each. Implicit anti-fat attitudes and the trait measures of body image employed in the full study then were used to predict interest in reading the derogatory media. Ratings of interest also made it possible to identify any problems with the headlines themselves. For example, if the majority of participants had selected the derogatory media and the headline for the neutral media articles also received very low rating of interest, headlines would have been re-written and piloted again.

A further methodological concern to be addressed with this pilot study was determining the best manner to inform participants in the full study that they might not receive the articles that they selected. Because participants were randomly assigned to groups after making their media selection, they needed to be informed, either before or after making their selection, that they might or might not receive their choice, ostensibly out of a need to maintain equal groups. Informing participants prior to selection might have influenced their choice, whereas informing them afterwards might have caused emotional reactivity, influencing responding on outcome variables in the full study. Therefore, in this pilot study, participants were randomly assigned to receive feedback either before or after making their media selection, after which they completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to assess their negative affect.

Four combinations of possible outcomes for differences in affect and proportion of individuals selecting the derogatory versus neutral media were identified, each with different courses

of action. (a) If receiving feedback either before or after making a media selection yielded no differences in either media selection or negative affect, participants would be provided with this information prior to media choice in the full study in order to avoid withholding information unnecessarily. (b) If feedback timing resulted in differences in selecting derogatory media, but negative affect was unaffected, in the full study feedback would be provided at the time that produced the most balanced groups. (c) In contrast, if feedback timing resulted in differences in negative affect, but media selection did not differ based on timing of feedback, participants would be provided with feedback at the time that produced less negative affect. (d) If both media selection and negative affect differed significantly based on timing of feedback, the relative impact of each variable would be weighed to determine the appropriate course of action.

Method: Pilot Study

Participants

Based on the results of a power analysis for logistic regressions (Hsieh, 1989), a total of 100 female undergraduates were recruited from the Department of Psychology Participant pool over the course of January and February 2014. Female students who had never been diagnosed with an eating disorder, and had not participated in previous studies conducted in the Studies in the Psychology of Appearance Lab, were identified by questions imbedded in the larger screening process that all students completed when registering for the participant pool (see Appendix A). Only those students were able to see the advertisement (see Appendix B) and register for the study. All participants received course credit for their participation.

Participants' ages ranged from 18 to 35 with a mean of 20.41 (SD = 2.67). In terms of years of university education, 27.0% were in their first year, 22.0% were in their second year, 29.0% were in their third year, 20.0% were in their fourth year, and 2.0% had attended for longer than four years.

The self-reported ethnic background of participants was as follows: 65% European, 10% Arab or West Asian, 5% East Asian, 5% South or Central American, 4% African, 4% South Asian, 3% multiple backgrounds, 2% Caribbean, 1% Aboriginal, and 1% other. Reported relationship status was as follows: 59% single, 36% in a relationship or cohabitating, and 2% married or common law.

Measures

Eating Disorder Inventory-2 - Body Dissatisfaction Subscale (***EDI-2-BD***; Garner, 1991).

The EDI -2 is a 91-item self-report measure of symptoms and psychological traits linked with eating disorders. The EDI-2 is comprised of 11 subscales, with one 9-item subscale assessing trait body dissatisfaction (EDI-2-BD). Responses are summed, and a higher score reflects greater body dissatisfaction. Respondents rate each item on a 6-point scale ranging from 1 (*never*) to 6 (*always*). A sample item is, "I think my stomach is too big." To keep testing sessions within a reasonable time limit and to minimize the focus on body image in order to maintain the plausibility of the cover story, only the EDI-2-BD was administered. With nonclinical samples, the EDI-2-BD has demonstrated good internal consistency (α = .91; Brookings & Wilson, 1994; Tylka, 2004), 3-week test-retest reliability (r = .97; Wear & Pratz, 1987), and convergent validity with the Body Shape Questionnaire (Cooper, Taylor, Cooper, & Fairburn, 1987), another measure of body dissatisfaction (r = .82; Garner, 1991).

Fear of Negative Appearance Evaluation Scale (***FNAES***; Lundgren et al., 2004). The FNAES is a 6-item trait measure designed to assess fears of being negatively evaluated on the basis of one's physical appearance (Lundgren et al., 2004). Items are rated on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). Items are summed, and higher scores indicate greater fear. A sample items is, "I am concerned about what other people think of my appearance." This measure has demonstrated good internal consistency with a sample of female undergraduates (α= .94; Lundgren et

al., 2004), and good convergence validity with measures of body image, eating disturbance, anxiety, and mood (Lundgren et al., 2004).

Appearance Schema Inventory-Revised (***ASI-R***; Cash, Melnyk, & Hrabosky, 2004). The ASI-R is a 20-item self-report trait measure of body image investment, or the importance placed on physical appearance. Participants rate each item on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Items are averaged, and a higher score reflects greater investment. In addition to producing an overall composite score, this measure also includes two subscales – Self-Evaluative Salience and Motivational Salience. For the purpose of this study, only the 12-item Self-Evaluative Salience subscale was included in the analyses. A sample item from this subscale is "When I see good-looking people, I wonder about how my own looks measure up." In an initial investigation (Cash et al., 2004), the ASI-R showed good psychometric properties for both males and females. However, given that only female participants were included in the current study, only the properties of the Self-Evaluative Salience subscale for the female sample are reported. Estimates of internal consistency were adequate for scores on this subscale ($\alpha = .82$). The Self-Evaluative Salience subscale also correlated with other body image measures, including the Body Image Ideals Questionnaire (Cash & Szymanski, 1995) ($r = .75$, $p < .001$), and the Situational Inventory of Body-Image Dysphoria – Short Form (Cash, 2002) ($r = .60$ $p < .001$), demonstrating good convergent validity (Cash et al., 2004).

Implicit Anti-Fat Attitudes: Weight -Implicit Associations Test (***W-IAT***; Greenwald, McGhee, & Schwartz, 1998; Gumble & Carels, 2010)**.** The IAT is a computerized measure of response latencies designed to assess individual differences in automatic or implicit associations between attributes and concepts (Agerström & Rooth, 2011). The IAT is the most prominent implicit measure of anti-fat bias, and requires participants to rapidly categorize stimuli (Roddy,

Stewart & Barnes-Holmes, 2011). The IAT is based on the assumption that participants will categorize stimuli more quickly and accurately when categories are paired in a way that is consistent with their implicit attitudes (Greenwald et al., 1998).

The stimuli used in the W-IAT (see Appendix C) include 10 negatively valenced and 10 positively valenced words, and 20 images of obese and thin silhouettes. The negatively valenced words include five general words (terrible, horrible, awful, hurt, evil) and five common fat stereotypes (lazy, undisciplined, stupid, insecure, and hostile). The positively valenced words include five general words (love, joy, peace, wonderful, laughter) and five positive descriptors that counter fat stereotypes (disciplined, motivated, intelligent, confident, and friendly). Participants classify the words into "bad" versus "good," and the images into "fat" versus "thin." Two categories are presented on the top left side of the screen, while the other two categories are presented on the top right side of the screen. The order of category pairings for the two testing blocks is counterbalanced across versions of the W-IAT (Nosek, Greenwald, & Banaji, 2005). During the first testing block for version one (block 3), the categories "good" and "thin" are paired together on the left side of the screen, while "bad" and "fat" are paired on the right side of the screen. The stimuli, either words or images, are presented in the center of the screen. Participants are required to press one key that is assigned to indicate that the stimulus belongs in either the "good" or "thin" categories and a different single key that is assigned to classify the stimulus in the "bad" or "fat" categories. For example, if the stimulus is an image of a fat woman the participant must correctly categorize this stimulus as "fat" by pressing the one key assigned to categorize stimuli as either "bad" or "fat." If the participant incorrectly presses the single key assigned to categorize stimuli as either "good" or "thin," they receive an error message and have to correct their mistake. The incorrect trial does not count towards their mean response time for this block. This same pairing (thin/good and fat/bad) is

then repeated again in the next testing trial (block 4). In the next testing block for version one (block 6), the pairings are switched such that "good" and "fat" are grouped on the left of the screen, and "bad" and "thin" are listed together on the right. Once again, participants categorize each presented stimulus by pressing one of two keys. This same pairing (fat/good and thin/bad) is then repeated in the next testing block (block 7). In version two, the order of the blocks is reversed such that the good/fat and bad/thin category pairings are presented first, whereas the good/thin and bad/fat pairings are presented second. For both versions, stimuli within each block are presented in random order, with an equal number of words and images per block.

The W-IAT is scored using the improved scoring algorithm developed by Greenwald, Nosek, and Banaji (2003). This scoring procedure involves the following steps, as summarized by Lane, Banaji, Nosek, and Greenwald (2007). First, trials with response latencies greater than 10,000 msecs are deleted. Next, participants with response latencies less than 300 msecs for more than 10% of their trials are deleted. Subsequently, a pooled standard deviation is computed for all of the trials in blocks 3 and 6. A separate pooled standard deviation is computed for all of the trials in blocks 4 and 7. Following this, the mean latency for responses for each of the test blocks (3,4, 6, and 7) is computed. Two mean differences are then computed, wherein the mean response times for each of the thin/good-fat/bad block are subtracted from the mean response times for the thin/bad-fat/good block ($M_{Block6} - M_{Block\ 3}$ and $M_{Block7} - M_{Block4}$). Each difference score is then divided by its respective pooled standard deviation. The final difference value (*D*) is the equal weighted average of the two difference scores (Lane et al., 2007).

Faster response times for the fat/bad and thin/good blocks compared to the fat/good and thin/bad blocks indicate greater implicit anti-fat attitudes. Thus, larger positive *D* scores on the W-IAT indicate stronger implicit anti-fat attitudes, whereas negative *D* scores reflect implicit bias

towards associating fat with positive attributes. *D* scores constitute a measure of effect size that is similar to, but distinct from, Cohen's *d* (Nosek & Sriram, 2007).

A meta-analysis conducted by Hofmann, Gawronski, Gschwendner, Le, and Schmitt (2005) including several studies that utilize W-IATs, indicates that the reliability of the IAT is adequate (r = .79). The IAT also has demonstrated good discriminant and convergent validity with both explicit (Gawronski, 2002) and implicit measures (Cunningham, Preacher, & Banaji, 2001). The IAT can be validly administered both online and in a laboratory setting (Houben & Wiers, 2008).

Positive and Negative Affect Schedule (***PANAS***; Watson, Clark, & Tellegen, 1988). The PANAS is a 20-item self-report measure that measures affect. It is divided into two subscales that assess positive (PA) and negative affect (NA) respectively. In this study, the state version of this scale was employed, which instructs participants to respond in accordance with how they feel "right now, that is, at the present moment." Respondents indicate the extent to which they are experiencing positive or negative affective states, such as "interested" or "upset," using a scale ranging from 1 (*very slightly to not at all*) to 5 (*extremely*). The ten positive affect and ten negative affect items are summed separately, and higher scores indicate greater affect.

Internal consistency for the two subscales using the state instructions is good, ranging from 0.85 to 0.89 for the PA subscale and from 0.85 to 0.91 for the NA subscale in a preliminary investigation (Watson et al., 1988). Low correlations have been found between the PA and NA subscales, demonstrating acceptable discriminant validity (rs ranged from -0.15 to -0.27; Schmukle, Egloff, & Burns, 2002; Watson et al., 1988).

Rosenberg Self-Esteem Scale (***RSES***; Rosenberg, 1965, 1979). The RSES is a 10-item self-report scale assessing global trait self-esteem. Items are rated on a 4-point scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Responses are summed and a higher score indicates higher

self-esteem. A sample item is "I feel that I have a number of good qualities." The RSES has high internal consistency with undergraduate samples (α = .92; Rosenberg, 1979). Among samples of adolescents and undergraduate students, test-retest reliability estimates ranged from .85 at two weeks (Silber & Tippett, 1965) to an average of .69 at six years (Robins, Hendin, & Trzesniewski, 2001). Among a sample of adolescents, the RSES correlated with other measures of self-esteem, demonstrating good convergent validity (Demo, 1985). Although self-esteem was not included in any pilot study analyses, it was examined as a covariate in all hierarchical regression analyses in the main study because it has been found to correlate with body dissatisfaction in women (e.g., Lowery et al., 2005).

Beck Depression Inventory-II (***BDI-II***; Beck, Steer, Ball, & Ranieri, 1996). The BDI-II is a 21-item self-report measure designed to assess cognitive, affective, and neurovegetative symptoms of depression. Items such as "sadness" and "loss of interest" are rated on a 4-point scale ranging from 0 (*absence of symptom*) to 3 (*severe level of that symptom*). Items are summed, and a higher score indicates higher depression. The BDI-II has demonstrated internal consistency among a sample of adult psychiatric outpatients (α = .92; Beck et al., 1996). Correlational analyses indicate satisfactory convergent validity with the Depression Anxiety Stress Scales (Lovibond & Lovibond, 1993) among a sample of university students (Osman et al., 1997). Although depression was not included in any pilot study analyses, it was examined as a covariate in all hierarchical regression analyses in the main study as it correlates with body dissatisfaction in women (e.g., Wiederman & Pryor, 2000).

Marlowe Crowne Social Desirability Scale – Form C (***MCSDS-C***; Reynolds, 1982). The MCSDS-C is a self-report measure comprised of 13 items endorsed as either true or false. Items are summed to produce a total score and higher scores indicate greater socially desirable responding. Examples of items include: "There have been occasions when I took advantage of someone" and "No

matter who I'm talking to, I'm always a good listener." This scale has demonstrated good internal reliability, as assessed using the Kuder-Richardson 20 Test, which is appropriate for measures with dichotomous choices ($r_{KR\text{-}20}$ = .76, Reynolds, 1982).

Demographics questionnaire. This questionnaire (see Appendix D) was used to acquire information such as age, ethnicity, and total years of university education. Self-reported height and weight were not analyzed in the pilot study, but were in the main study. Questions contained in this measure were included to provide thorough descriptive information about participants.

Procedure

The pilot study was conducted entirely online and took approximately 30 minutes to complete. In order to minimize demand characteristics, the true purpose of the study was not disclosed until the debriefing. Participants were invited to take part in this study via the participant pool website. They were informed that the study examined the relationship between reaction time, individual difference variables, and preferences for publication type (see Appendix B for advertisement).

After registering for the study, participants were e-mailed a link and matching login code for the FluidSurvey study webpage. After providing informed consent (see Appendix E for consent form), they clicked a link directing them to a separate webpage where they were randomly assigned to complete one of the two versions of the W-IAT. The webpage containing the W-IAT was hosted on a University of Windsor server outside of FluidSurvey. However, each participant's FluidSurvey code was automatically collected and stored along their W-IAT data so that datasets could be easily combined when data collection was completed. After completing the W-IAT, participants were directed back to the study webpage, where they completed all the remaining measures. The order of presentation for the following measures was randomized for each participant: depression (measured

by the BDI-II), body dissatisfaction (measured by the EDI-2-BD), socially desirable responding (measured by the MCSDS-C), trait fear of negative appearance evaluation (measured by the FNAES), trait self-esteem (measured by the RSES), body image investment (measured by the ASI-R). A "back" button was not included in the survey pages in order to encourage completion of the measures in the order presented. Subsequently, all participants completed the demographic questionnaire.

After completing the measures, participants were asked to "select a media preference." Participants were presented with two headlines and instructed to choose the headline for the articles they would like to read, and then rate their degree of interest in reading each of the sets of articles on a scale ranging from 1 (*no interest*) to 7 (*extremely interested*). The headline for the derogatory articles was "Weighed Down: Frumpy Figures from our Fave Leading Ladies." The headline for the neutral articles was "Celebrities Incognito: What the stars are up to in your backyard!" The order in which the headlines appeared on the screen was randomized. Participants were reminded that their choice was completely confidential and instructed to respond based on their true preferences. Prior to making their selection, half of all participants were randomly assigned to view a message explaining that due to a supposed need to maintain equal groups, they may or may not receive their selection. The other half of participants received this message immediately after making their media selection. Next, they read the instruction, "Before reading the articles, we would like to know how you're feeling" immediately prior to completing the PANAS. Subsequently, participants viewed the debriefing form (see Appendix F) followed by the terms associated with consent to data retention (see Appendix G). They provided informed consent to the use of their data by clicking 'Yes' at the bottom of this consent page. No participants declined data retention. Finally, to ensure that participant information was kept separate from their data, they were re-directed to a separate landing

website to provide their name and student number in order to obtain their 0.5 course bonus credit.

Results: Pilot Study

Approach to Data Analysis

All analyses were performed using SPSS for Mac, Version 23.0. Missing values, reliability, and descriptive analyses were performed, and assumptions for all analyses were checked. A χ^2 test was used to determine whether timing of feedback (before or after media selection) resulted in significant differences in the choice of neutral or derogatory media. A series of three, two-tailed *t*-tests also were conducted to determine whether timing of feedback (before or after media selection) resulted in significantly different ratings of interest in either the neutral or derogatory media, or ratings of negative affect. Finally, a direct logistic regression was used to conduct a preliminary test of hypothesis 2, which postulated that women's selection of weight-based derogatory media would be predicted by lower body satisfaction and greater fear of negative appearance evaluation, implicit anti-fat attitudes, and maladaptive appearance investment.

Missing Data

A missing data analysis was conducted to identify patterns in omitted values. Less than 0.004% (n = 34) of all possible values were missing. The percentage of missing values for each item ranged from 0 to 2%. Little's MCAR test was not significant, $\chi 2$ (1697) = 1684.35, p = .582. As per this test, the missing values appear to be randomly distributed. Subsequently, expectation maximization was used to replace missing values. This method is acceptable as a very small proportion of the data were missing from a large data set, and almost any procedure for handling missing values would yield similar results (Tabachnik & Fidell, 2007).

Preliminary Analyses

Descriptive analyses were performed on each variable to check for univariate outliers, identified by standardized residuals greater than |3.29| (Tabachnik & Fidell, 2007). A single outlier was identified on the ASI-R SES subscale, and it was reduced using Winsorization (Tabachnik & Fidell, 2007). Means, standard deviations, and internal reliability coefficients are presented in Table 2. Implicit anti-fat attitudes were measured with the W-IAT, which produces a difference (*D*) score for each participant. The *D* score is a measure of effect size that is akin to Cohen's *d*, though they remain distinct from one another. The relationship between the *D* score and Cohen's *d* value can be expressed using the formula $D = 2d / \sqrt{(4 + d^2)}$ (Nosek & Sriram, 2007). To compute Cohen's *d* from the difference score, this formula was re-worked as $d = 2D / \sqrt{4 - D^2}$. Cohen's *d* for the W-IAT was 0.55, which can be interpreted as a medium effect size. This indicates that, on average, participants moderately endorsed anti-fat attitudes using the implicit measure. Next, descriptive information was computed for the proportion of individuals selecting the neutral and derogatory media (See Table 3). A total of 53 individuals selected the neutral media headline, whereas 47 selected the derogatory media headline. Median interest ratings for both the derogatory and neutral headlines were 3.0, which equated to "somewhat interested" on the rating scale used.

Table 2

Descriptive Data for All Pilot Study Measures (N = 100)

Variable	Range	*M*	Median	*SD*	Cronbach's α
Age	18.00 – 35.00	20.41	20.00	2.67	-
BDI-II	0.00 – 40.00	12.28	11.00	9.07	.90
MCSDS-C	0.00 – 13.00	5.74	5.66	2.78	.67
RSES	4.00 – 30.00	20.04	20.00	5.42	.91
ASI-R - SES	1.86 – 4.13	3.15	3.25	0.39	.81
EDI-BD	11.00 – 54.00	31.17	30.00	10.67	.91
W-IAT	-0.55 – 1.34	0.53	0.54	0.41	-
FNAES	6.00 – 30.00	18.25	18.00	5.68	.92
PANAS – NA	10.00 – 39.00	15.18	12.00	7.43	.93
Interest derogatory	1.00 – 7.00	2.94	3.00	1.61	-
Interest neutral	1.00 – 7.00	3.32	3.00	1.75	-

Note. BDI-II = Beck Depression Inventory-II; MCSDS-C = Marlowe Crowne Social Desirability Scale – Form C; RSES = Rosenberg Self-Esteem Scale; ASI-R –SES = Appearance Schema Inventory-Revised –Self Evaluative Salience Scale; EDI-BD = Eating Disorders Inventory - 2 - Body Dissatisfaction Scale; FNAES= Fear of Negative Appearance Evaluation Scale; PANAS – NA = Positive and Negative Affect Schedule – Negative Affect

Table 3

Pilot Study Media Selection Results

Timing of warning	Derogatory Media	Neutral Media
Warned before selection	22	27
Warned after selection	25	26
Total	47	53

Testing Assumptions

Assumptions for the *t* tests. Histograms, Q-Q plots, the Shapiro-Wilk (*SW*) statistic, and values of skewness and kurtosis were evaluated to determine whether the PANAS NA and ratings of interest in the neutral and derogatory media articles were normally distributed (Field, 2000). The *SW* statistic revealed that none of the variables were normally distributed. However, plots for ratings of interest in both derogatory and neutral media approximated the normal distribution, skewness values were within the acceptable range of ±2, and kurtosis values were within the acceptable range of ±3. A square root transformation applied to each interest rating failed to yield improvements on any metric. Consequently, nontransformed interest ratings were used in subsequent *t* tests. In contrast, histogram and Q-Q plots revealed that the PANAS NA variable was severely positively skewed, and an inverse transformation was applied. After transformation the *SW* statistic remained significant, but the data for PANAS NA more closely approximated the normal distribution and values for skewness and kurtosis values were improved to within acceptable ranges.

Logistic regression. Given that the total sample consisted of 100 participants and only 4 predictors were included, a sufficient ratio of cases to variables was clearly present. To check for multicollinearity, bivariate correlations of all predictors were examined, and standard errors for parameter estimates were reviewed. There were no exceedingly large standard errors, and no correlations exceeded $r = .60$. Consequently, the assumption of absence of multicollinearity was met. To determine whether the assumption of linearity in the logit was met, the Box Tidwell approach was used (Hosmer & Lemeshow, 2000). Based on this assessment, a linear association was found between all continuous independent variables and the logit of the dependent variable, $ps > .392$. Absence of outliers in the solution was confirmed after an examination of residuals revealed no

outlying values. Independence of errors was assumed as this study employed a between-subjects design where participants were tested separately (Tabachnik & Fidell, 2007).

Main Analyses

Delivery of feedback about media selection. A Chi-square test was used to determine whether timing of feedback (before or after media selection) impacted the proportion of individuals selecting neutral or derogatory media. The results were nonsignificant, $\chi^2(1) = .170$, $p = .680$, indicating that individuals' media selection did not differ in accordance with feedback timing.

A two-tailed *t* test revealed that timing of feedback had a significant impact on negative affect, $t\ (98) = -2.119$, $p = .036$. Specifically, individuals reported greater negative affect when they were warned they might not receive their choice before making their media selection. Feedback timing did not yield significant differences on ratings of interest in derogatory media headlines ($p = .705$) or neutral media headlines ($p = .881$).

Preliminary test of reinforcing spirals theory. A direct logistic regression was used to test the hypothesis that women's selection of weight-based derogatory media would be predicted by lower body satisfaction and greater fear of negative appearance evaluation, implicit anti-fat attitudes, and maladaptive appearance investment. All predictor variables were entered into the equation simultaneously: body dissatisfaction (EDI-2-BD), trait fear of negative appearance evaluation (FNAES), implicit anti-fat attitudes (W-IAT), and maladaptive appearance investment (ASI-R-SES). This is the preferred method of entry when there are no specific hypotheses about the relative importance of predictor variables (Tabachnik & Fidell, 2007). Interactions among predictors were not hypothesized, so none were entered. The outcome variable was media selection. Selection of weight-based derogatory media was coded 1, whereas neutral media selection was coded 0. This is

important for interpretation because SPSS produces odds ratios for the outcome coded 1 (Tabachnik & Fidell, 2007).

The logistic regression model was not statistically significant, $\chi^2(4) = 6.03$, $p = .197$. The model explained only 7.8% (Nagelkerke R^2) of the variance in media selection, and correctly classified 63.0% of cases. Additionally, only 51.1% of individuals who selected the derogatory media were correctly predicted by the model. None of the individual predictor variables were statistically significant (see Table 4). However, there was a trend, approaching significance, between increasing implicit anti-fat attitudes and a reduction in the likelihood of selecting weight-based derogatory media.

Table 4

Pilot Study Logistic Regression Predicting Selection of Derogatory Media (N=100)

						95% CI for Exp(B)	
	B	SE	Wald	*Exp(B)*	*Sig.*	Lower	Upper
W-IAT	-1.02	0.54	3.51	0.36	.061	0.13	1.05
ASI-R- SES	-0.78	0.59	1.76	0.46	.185	0.15	1.45
FNAE	-0.03	0.05	0.51	0.97	.475	0.88	1.06
EDI- BD	0.01	0.02	0.36	1.02	.548	0.97	1.06
Constant	3.06	1.88	2.65	21.30	.103		

Note. W-IAT = Weight Implicit Associations Test; ASIR –SES = Appearance Schema Inventory-Revised –Self Evaluative Salience Scale; FNAE = Fear of Negative Appearance Evaluation; EDI-BD= Eating Disorders Inventory - 2 - Body Dissatisfaction Scale

Discussion

A primary methodological concern addressed in this pilot study was whether a roughly equal proportion of women would select the derogatory and neutral media headlines. Indeed, similar numbers of participants selected each headline, with 47% of individuals choosing the neutral headline and 53% choosing the derogatory headlines, suggesting that analyses for the full study would have sufficient power. A further methodological concern was whether it would be best to warn participants that they might not receive the articles they chose either before or after the selection task. Results revealed that feedback timing did not significantly impact the proportion of individuals selecting each headline or their degree of interest in reading either set of articles. However, individuals reported more negative affect when they were warned prior to making their media selection that they might not receive their choice. Based on these results it was determined that in the full study, participants would receive this feedback after completing the media selection task in order to reduce emotional reactivity.

The final purpose of this pilot study was to provide a preliminary test of Slater's (2007) reinforcing spirals theory. Results yielded no support for reinforcing spirals theory. Contrary to predictions, greater body dissatisfaction, maladaptive appearance investment, implicit anti-fat attitudes, and fear of negative appearance evaluation all failed to significantly predict selection of the weight-based derogatory media headline. Further, a trend emerged, in the opposite direction of predictions, between increasing implicit anti-fat attitudes and a reduction in the likelihood of selecting weight-based derogatory media.

Although these findings were not in line with expectations, the decision was made not to alter the predictions or procedure for the main study on the basis of these preliminary findings alone. Firstly, unlike the procedure for the main study, participants in this pilot study made their media

selection immediately after completing the implicit anti-fat attitudes test and the body image-related measures. Although having participants complete both tasks online in a single session was more time efficient, this approach reduced the ecological validity of the selection task. Indeed, women's real world media choices are rarely preceded by in-depth reflection on appearance-based concerns, and so it remained unclear how this may have influenced selection. Further, this pilot study examined only one of the hypotheses stemming from reinforcing spirals theory. Predictions about the greater negative impact of weight-based derogatory media on women who choose these media for themselves were not examined, and thus remained important targets for investigation in the complete study. Finally, although the pilot study yielded insufficient evidence to merit altering predictions, if the trend towards lower implicit anti-fat attitudes predicting selection of weight-based derogatory media emerged as significant in the complete study, this could have important implications for reinforcing spirals theory, and thus warranted further exploration in the complete study.

CHAPTER III

Method: Main Study

Participants

Based on the results of power analyses for hierarchical (Cohen, 1988) and logistic regressions (Hsieh, 1989), a total of 240 female undergraduates from the Department of Psychology Participant pool were recruited for both components of the study. Data collection took place from February 2014 to October 2015. Screening questions, completed upon registration with the participant pool, were used to identify female students who had never been diagnosed with an eating disorder and had not participated in previous studies conducted in the Studies in the Psychology of Appearance Lab (see Appendix A). The study was invisible to participants who did not meet eligibility criteria.

Participants' ages ranged from 17 to 36 years with a mean of 21.76 (*SD* = 5.99) years. In terms of years of university education, 34.3% were in their first year, 30.5% were in their second year, 15.0% were in their third year, 14.2% were in their fourth year, and 6.0% had attended for more than four years. Their self-reported ethnic background was as follows: 53.6% European, 11.9% South Asian, 8.5% Arab or West Asian, 8.1% East Asian, 4.7% African, 4.3% multiple backgrounds, 4.3% other, 3.4% Caribbean, 0.9% South or Central American, and 0.4% Aboriginal. In accordance with the World Health Organization (2000) classification, the objectively measured BMI of participants was as follows: 5.3% of participants were underweight (BMI < 18.5), 61.2% were of normal weight (BMI = 18.5 – 24.9), 18.2% were overweight (BMI = 25.0 – 29.9), and 15.3% were obese (BMI ≥ 30.0). BMI calculated from participants' self-reported height and weight was as follows: 8.1% underweight, 63.0% normal weight, 7.2% overweight, and 13.6% obese. Reported relationship status was: 59.1% single, 30.6% in a relationship or cohabitating, 8.5% married or common law, and 1.7% divorced or separated.

Materials

Three sets of images of "normal" weight female British celebrities were selected from online tabloid-style articles that derogated these celebrities for gaining weight or for wearing garments that were unflattering to their size and shape. Minor British celebrities, such as Lily Cole, were selected to reduce the possibility of allegiance effects in this Canadian sample. The same set of images was used for the weight-based derogatory and neutral media conditions. The derogatory articles reflected the content of the original articles from which the images were extracted to the greatest extent possible. Each weight-based derogatory article included critical comments about the weight or shape of the person being targeted, as well as the implicit message that weight can and should be controlled. Each article also included a negative comparison with the celebrity's previous thinner figure as well as critical comments about her diet or exercise habits. In the neutral media condition, all images were accompanied by neutral text that omitted comments about physical appearance and focused on innocuous information about the celebrity's life (see Appendix H).

The word count was approximately the same for the derogatory (M = 141.67, SD = 33.12) and neutral (M = 139.83, SD = 34.07) articles. Each derogatory article differed by no more than five additional words from its neutral counterpart. For each image set, at least one of the photos showed the celebrity's full body and in all, the celebrity is the only person in the photos. Using the images included in the current study, four raters with expertise in eating disorder treatment and body image research provided direct estimates of the celebrities' actual BMI. Estimates varied between 18 and 25 with a mean of 21.28 (SD = 1.97). The average measure intraclass correlation was .790, 95% CI [0.22, 0.98].

The images and articles used in the current study were originally developed for Boersma and Jarry's (2013) study. Employing these previously utilized materials was preferable as it maintained

the greatest possible level of consistency between the current study and the study conducted by Boersma and Jarry (2013). Because these articles were first developed in 2010, the text in the articles was updated to reflect the current age, projects, and/or partners of the celebrities to make them as accurate as possible, without changing the nature of the weight-based derogatory content (see Appendix H for current articles and Appendix I for the articles used in Boersma & Jarry's study). Plausible, but fictitious information that was included in the articles in Boersma and Jarry's (2013) study was maintained in the articles in the current study (e.g., the name of Danii Minogue's trainer, which she has not disclosed in recent interviews, and her supposed involvement in a minor traffic accident). The neutral and derogatory articles about Lily Cole were the only articles that contained information that was out-of-date. Specifically, these articles indicated that Lily Cole just completed her first year of college, when in actuality she had completed her degree when the present study was conducted. This information could not be updated without completely changing the nature of the derogatory comments directed towards this celebrity, which focused on her "gaining the freshman 15." During the debriefing, participants were asked if they follow the lives of the celebrities in the articles, and if they noticed any inaccuracies in the articles. Only 12 individuals reported that they followed the lives of the featured celebrities, and no participants identified any of the inaccuracies contained in the articles.

A group of five members from the Studies in the Psychology of Appearance research group rated the content of the articles used in Boersma and Jarry's (2013) study using a scale ranging from 1 (*no weight-based derogatory content*) to 10 (*extremely derogatory weight-based content*). The neutral articles unanimously received scores of 1. The ratings for the derogatory articles ranged from 5 to 10 with a mean rating of 7.6 (SD = 1.45).

Measures

Following Thompson's (2004) recommendations, some of the instruments were slightly altered to meet the measurement needs of this study. These modifications are specified below.

Online measures. There were two components to this study. The first took place online and preceded the second component, which took place in the lab. Approximately one to two weeks after completing Part 1 of the study online, participants came in to the lab to complete Part 2. With the exception of the PANAS, participants in the online component of the main study completed the same measures used in the pilot study. The EDI-2-BD, FNAE, ASI-R, and W-IAT (see Appendix C) were all predictor variables. Covariate measures included the RSES, BDI-II, MCSDS-Form C, and a demographics questionnaire (see Appendix D)

Laboratory Measures: Independent Variable

Selection of weight-based derogatory media. Participants indicated their preference to view either the neutral or derogatory articles. They also rated their degree of interest in reading each of the sets of articles on a scale ranging from 1 (*no interest*) to 7 (*extremely interested*). Following from the results of the pilot study, after making their selection and indicating their degree of interest, participants received feedback that, due to a supposed need to maintain equal groups, they might not receive their choice. Their selections were recorded prior to random assignment to either the neutral or derogatory media condition. Selection of weight-based derogatory media was coded as 1, and selection of neutral media was coded as 0.

Laboratory Measures: Dependent Variables

Body Image States Scale (***BISS***; Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002). The BISS is a 6-item self-report measure of state body satisfaction. Participants respond to items on a 9-point scale in accordance with how they feel "right now, at this very moment." For example,

Item 1 of the scale ranges from "Extremely dissatisfied with my appearance" to "Extremely satisfied with my appearance." Items are averaged to produce a total sum score, with higher scores reflecting greater state body satisfaction. Cash and colleagues (2002) found that Cronbach's alphas ranged from .77 to .90, and test-retest reliability over a 2- to 3-week period was .69 in a female sample. The BISS also is correlated with the Body Areas Satisfaction subscale of the Multidimensional Body-Self Relations Questionnaire (Brown, Cash, & Mikulka, 1990) (r = .77), demonstrating good convergent validity (Cash et al., 2002).

Body Image Assessment Scale – Body Dimensions (***BIAS-BD***; Gardner et al., 2009). The BIAS-BD is a figural rating scale that uses anthropometric physical measurements of adult women. The scale consists of 17 figural outline drawings representing BMI values ranging from 60-140% of the United States average BMI. Figures of women range from a BMI of 16.9 to 39.5, differing in 5% increments. The BIAS-BD represents an improvement on previous figural ratings scales, where artist rendered silhouettes were not based on known body dimensions and did not increase in size at a constant rate, with facial and body features reflecting obvious Caucasian ethnicity (Gardner et al., 2009). Figures are presented in a pre-set randomized order on a single page, and participants are asked to mark their current and ideal body size. The discrepancy between perceived and ideal body size is used to denote body dissatisfaction, with greater discrepancies reflecting greater dissatisfaction.

Over a 2 week period, BIAS-BD has good test-retest reliability for self, ideal, and discrepancy scores (rs =.71 to.86). Current body size ratings also demonstrate good concurrent validity with BMI (r = .76; Gardner et al., 2009).

Fear of Negative Appearance Evaluation Scale – State (***FNAES-S***; Lundgren et al., 2004). The FNAES, which is described above, was modified slightly for use as a dependent variable.

Specifically, the instructions and the wording of two items were adjusted to gather state rather than trait information. For example, the item "When I meet new people, I wonder what they think about my appearance" was changed to "If I met a new person right now, I would wonder what they thought about my appearance." These modifications were employed in Boersma and Jarry's (2013) study.

Implicit Anti-Fat Attitudes: Weight -Implicit Associations Test (***W-IAT***; Greenwald et al., 1998; Gumble & Carels, 2010). The W-IAT, which is described above, also was used as a dependent variable in the laboratory session (see Appendix C).

Appearance Schemas Activation: Word-stem Completion Task (Tiggemann, Hargreaves, Polivy, & McFarlane, 2004). This 20-item word stem completion task assesses the activation of appearance schemas (see Appendix J). Each word stem has three letters (e.g., DIE__). Reponses are categorized as either appearance or nonappearance words. The number of appearance-related words is then summed to produce a total score.

In the initial validation study, Tiggemann and colleagues (2004) tested the reactivity of the measure in several experiments. They found that following exposure to thin media images or other appearance-related material, undergraduate participants generated significantly more appearance-related words. Further, in one of the studies in the validation paper, following exposure to appearance-based music videos, male participants exhibited greater appearance schema activation on the word stem completion task without any corresponding increases in body dissatisfaction. This result suggests that the word-stem completion task is not simply a measure of body dissatisfaction. Based on these findings, the researchers concluded that the word stem completion task is a sensitive implicit measure of schema activation following media exposure.

In the current study, two independent raters who were blind to media condition categorized all completed word stems as appearance or nonappearance related. Scoring disagreements arose for

a total of 27 words, which accounted for 3.6% of all responses. All discrepancies were resolved with input from members of the Studies in the Psychology of Appearance Lab.

Laboratory Measures - Covariate

Body Mass Index (***BMI***). BMI was calculated by dividing each participant's measured weight (in kilograms) by their height (in metres squared). Self-reported height and weight were used to calculate BMI for participants who refused measurement. BMI was examined as a covariate in all hierarchical regression analyses to rule out the possibility that women's reactions to weight-based derogatory media were attributable to their objective body weight.

Procedure

The study consisted of both an online component and a laboratory component. For a summary of the procedure refer to Table 5. In order to minimize demand characteristics, the true purpose of the study was not disclosed initially, and the two components of the study were presented as separate studies. Participants were invited to participate in these two ostensibly separate studies via the participant pool website. The first study purportedly examined the relationship between reaction time and individual difference variables (see Appendix K for advertisement). The laboratory component was advertised as a study examining the effects of individual difference and publication type on memory for information about people. Participants were informed that the two studies were separate, but the primary investigator was advertising them together to maximize the efficiency of recruitment and to ensure that participants were already familiar with the "reaction time task" (W-IAT) from Study 1, as it was being utilized as a "distractor task" for the "memory study." Participants received 0.5 bonus points for 30 minutes in the online study, and 1 bonus point for 60 minutes of participation in the laboratory component.

Once they had registered for both parts of the study, students were e-mailed a link and matching login code to access the FluidSurvey webpage. They completed the online study at their convenience before the completion deadline. Student names and codes were stored together in an encrypted and password protected spreadsheet, separate from their data. A second spreadsheet containing names and online study codes was used to assign each individual a second code and study link for taking part in the laboratory component. After entering the login information and providing informed consent (see Appendix L), participants read the general study instructions for the online study (see Appendix M). Next, they clicked a link directing them to a separate webpage with one of the two versions of the W-IAT, determined by random assignment. The W-IAT was hosted on a University of Windsor server outside of FluidSurvey. Each participant's online study code was stored with the W-IAT data to allow for later matching of data. After completing the W-IAT, participants were directed back to the FluidSurvey webpage, where they completed all of the remaining measures. The order of presentation of the following measures was randomized for each participant: depression, measured by the BDI-II; body dissatisfaction, measured by the EDI-2-BD; socially desirable responding, measured by the MCSDS-C; trait fear of negative appearance evaluation, measured by the FNAES; trait self-esteem, measured by the RSES; body image investment, measured by the ASI-R. A "back" button was not included in the survey pages in order to encourage completion of the measures in the order presented. Next, participants completed the demographic questionnaire. Once they had completed the measures, they were directed to a page containing the terms associated with consent to data retention (see Appendix G). They provided informed consent to the use of their data by clicking 'Yes' at the bottom of this consent page. No participants withdrew consent. Subsequently, all participants were directed to a page that provided contact information for the primary investigator, university counselling services, as well as

community resources (see Appendix N). Finally, to ensure that identifying information was kept separate from their data, they were directed to a separate landing page to provide their name and student number in order to obtain their bonus credit.

One to two weeks after the online survey, participants completed the laboratory portion of the study. To limit attrition, they received a reminder e-mail one to two days prior to their appointment. At the laboratory session, participants gave informed consent (see Appendix O). Next, they were provided with a laptop open to the laboratory FluidSurvey webpage. Their login code was pre-entered by a research assistant. Next, the research assistant provided them with the following instructions:

> "The first thing you're going to do is select the set of articles you'd like to read. Your selection is completely confidential, so please choose based on your true preferences. After that, you're going to have 10 minutes to read and try to remember the set of 3 articles in preparation for the later multiple choice memory test. You'll click a link to open the articles and then hit the timer, which is set for 10 minutes. You can click through the articles as many times as you wish. When the timer goes off click through to the end of the set of articles, hit submit, and close the window. This will record the time you spent looking at the articles, so please be careful not to go past the 10 minutes. Once you've done that, click to the next page and wait. I will return to provide further instructions."

Subsequently, the research assistant left the room, and the participant entered their media selection and rated their interest in the articles. The headline for the derogatory articles read "Weighed Down: Frumpy Figures from our Fave Leading Ladies." The headline for the neutral articles read "Celebrities Incognito: What the stars are up to in your backyard!" The order in which the headlines appeared on the screen was randomized to control for order effects.

After entering their selection, participants read a message indicating that, due to the need to maintain equal groups, they may or may not receive their choice. They then clicked a link to open either the neutral or derogatory articles, determined via random assignment. After 10 minutes elapsed, the research assistant returned and entered a study code to allow the procedure to continue. She then provided the following instructions before leaving the room:

> "Before you complete the memory test on the articles you just read, you're going to complete 2 distractor tasks. One of the distractor tasks is the reaction time task that you will be familiar with from the study you completed online. You will also answer questions about your thoughts and feelings about yourself, which may affect your memory for the descriptions you just read. After you've completed both distractor tasks and answered all of the questions, you'll complete the memory test. Once you've completed and submitted the memory test, please ring the bell to let me know you're done and wait for me to return. Also, please don't hesitate to ring the bell if you have difficulties or questions as you go through the rest of the study."

Subsequently, students completed the word stem completion task to assess appearance schema activation. This task was presented first as it may be susceptible to influence by completion of the other measures. Next, participants read the following instruction (reiterating the research assistant's verbal directions), which is similar to that given by Trottier, Polivy, and Herman (2007): "Next we would like you to complete this series of questionnaires. We're giving you these questionnaires because your thoughts and feelings about yourself may affect your memory of the descriptions that you just read." At this point, participants completed the BIAS-BD, BISS, and FNAES-S. The order of presentation of these measures was randomized for each participant to control for order effects. Next, they were informed that they would be completing another distractor task. They then clicked a

link to another webpage to complete one of two versions of the W-IAT, determined via random assignment. Their lab FluidSurvey code was saved with the W-IAT data to facilitate later data matching.

After being re-directed back to the FluidSurvey page, participants responded to one question about the frequency with which they read or heard derogatory messages about women's weight on a daily basis on a scale from 1 (*never*) to 7 (*always*). Subsequently, participants completed a brief "memory test", which served as a manipulation check to ensure that they actually read the articles. Participants who failed to answer a minimum of 2/3 of the questions correctly on this test were excluded from the analyses (for neutral media and derogatory media versions of the test, see Appendix P). A highly similar memory test was employed in Boersma & Jarry's (2013) study, and no participants were excluded on the basis of poor memory test scores.

Finally, participants were debriefed and informed of the true purpose of the study (see Appendix Q). Prior to debriefing they were asked what they thought the study was about. For participants who guessed that the study was about body image or anti-fat attitudes, further enquiries were made about what they believed to be the true hypotheses of the study, and at what point during the procedure they developed these hypotheses. Participants also were asked about whether they regularly followed the lives of the celebrities described in the articles, and if so, if they considered the articles to be factually accurate (see Appendix R). After being debriefed, participants provided consent for retention of their data (see Appendix S). Additionally, those who consented were weighed and had their height measured in order to calculate BMI (see Appendix T).

Table 5

Order of Administration for All Measures and Materials in the Complete Study

Step	Procedure	Order of Information Completed
	Online Component	
1.	Received e-mail with login information and link to online FluidSurvey page. Logged on to study website with matching code.	------
2.	Cover story, consent, read general instructions for online survey	Consent form
3.	Clicked link to alleged "reaction time test"	Measure of implicit anti-fat attitudes (W-IAT)
4.	Returned to study website. Completed online questionnaires.	Randomized presentation of the following: Depression (BDI-II); trait body dissatisfaction (EDI-2-BD); socially desirable responding (MCSDS-C); trait fear of negative appearance evaluation (FNAES); trait self-esteem (RSES); body image investment, measured (ASI-R). Demographic questionnaire completed last.
5.	Consent to data retention, post study information form	Consent to data retention form
6.	Redirected to separate landing page to receive credit for participation	Entered name and student number
	Laboratory Component (7-14 days later)	
1.	Cover story and consent	Consent form
2.	Provided with laptop with two headlines to choose from.	Select a headline to read. Rate interest in articles.
3.	Randomly assigned to neutral or derogatory media condition. Spent 10 minutes reading three articles in preparation for a "memory test."	-----
4.	Completed implicit measure presented as a "distractor task"	Appearance schemas activation (word-stem completion task)
5.	Completed all remaining questionnaire measures	Randomized presentation of the following: Body satisfaction (BISS); self-ideal

		discrepancies (BIAS-BD); State fear of negative appearance evaluation (FNAES-S)
6.	Completed implicit measure presented as a "distractor reaction time task"	Implicit anti-fat attitudes (W-IAT)
7.	Rated frequency of hearing derogatory messages about women's weight. Completed "memory test."	Responded to question about frequency of hearing weight-based derogation. Completed manipulation check to ensure articles were read.
8.	Debriefing	Responded to questions about guessing study hypotheses, familiarity with celebrities, and accuracy of articles.
9.	Consent to data retention	Consent to data retention form
10.	Weight/ Height Consent	Weight/ Height Consent Form
11.	Measurement of weight and height	Weight and height recorded

CHAPTER IV

Results

Approach to Data Analysis

All analyses were performed using SPSS for Mac, Version 23.0. After conducting preliminary analyses, as described below, reliability and descriptive analyses were performed for study variables. Next, a series of independent sample *t* tests were conducted on covariates and the moderator, maladaptive appearance investment, to ensure that randomization to the neutral and derogatory media conditions was successful. Hypothesis 2 was tested with a logistic regression to determine whether greater trait body dissatisfaction, fear of negative appearance evaluation, implicit anti-fat attitudes, and maladaptive appearance investment were predictive of selecting weight-based derogatory media. All other hypotheses were tested with a series of hierarchical multiple regressions. As a subsequent follow-up analysis, a two-way mixed ANOVA was conducted to investigate whether implicit anti-fat attitudes increased following exposure to weight-based derogatory media.

Missing Data and Manipulation Check

Prior to analysis, the data were examined for accuracy of entry and missing values. Little's MCAR test was not significant, p=.605. As per this test, the missing values seem to be randomly distributed. Less than 0.01% (n = 280) of all possible values were missing. With the exception of objectively measured BMI, the percentage of missing values for each item ranged from 0 to 3.7%. Additionally, 11.0% of participants (n = 26) did not consent to have their height and weight measured. Self-reported BMI for participants who refused measurement was as follows: 7.6% underweight (BMI < 18.5), 46.1% normal weight (BMI = 18.5-24.9), 23.1% overweight (BMI = 25.0-29.9), and 23.1% obese (BMI ≥ 30.0). The number of individuals who refused measurement did

not differ based on media condition, $\chi^2(24) = 23.89$, p=.468. Self-reported BMI for individuals who refused measurement did not differ significantly from either self-reported (p = .080) or objectively measured BMI among participants who consented to measurement (p = .394). Further, there was a high correlation between self-reported BMI and objectively measured BMI (r = .93, p < .001). Consequently, self-reported estimates were substituted for all 26 participants who refused measurement. Expectation maximization was used to replace all remaining missing values for the covariate, predictor, and outcome variables, given that when a very small proportion of the data are missing from a large data set, similar results are produced from almost any procedure for handling missing values (Tabachnik & Fidell, 2007).

Subsequently, participant performance on the manipulation check was reviewed. The manipulation check, a 15-item multiple-choice test presented as a "memory test," was used to ensure that participants had actually read the articles. The average score for this test was 93.6% (M = 14.04, SD = 1.41). The minimum cut-off for inclusion in data analysis was 10/15 items answered correctly. A total of 5 participants did not meet this minimum score. More specifically, 4 participants answered too many questions incorrectly (2 from each media condition), and 1 participant from the neutral media condition failed to complete the measure altogether. Participants who failed the memory test closed the viewing window for the articles after an average of 42 seconds (ranging from 18 – 63 seconds), suggesting that they did not receive adequate exposure to the experimental manipulation. All 5 participants were excluded from analyses, leaving a remaining N of 235.

Preliminary Analyses

Descriptive analyses were performed on each variable to check for univariate outliers, identified by standardized residuals with absolute values greater than 3.29. A total of 5 outliers were identified for BMI, and they were reduced using Winsorization (Tabachnik & Fidell, 2007). Means,

standard deviations, and internal reliability coefficients are presented in Table 6. Implicit anti-fat attitudes were measured online at Time 1, and following media exposure at Time 2. The measure produces a difference (*D*) score for each participant, which is an effect size similar to Cohen's *d* (Nosek & Sriram, 2007). The mean of these *D* scores was then converted to Cohen's *d*, yielding values of 0.61 and 0.47 for the W-IAT at Times 1 and 2 respectively, which can be interpreted as medium effect sizes. Thus, participants moderately endorsed anti-fat attitudes using the implicit measure.

Next, each variable was assessed for normality by evaluating histograms, Q-Q plots, the Shapiro-Wilk (*SW*) statistic, and values of skewness and kurtosis. Although having normally distributed predictors (e.g. BMI, MCSDS-C, BDI-II, RSES and ASI-R-SES) is not a formal assumption of multiple regression, Tabachnick and Fiddell (2007) recommend testing for normality because non-normally distributed variables can cause heteroscedasticity, reduce pairwise linearity, and degrade the overall solution. Scores for the ASIR-SES, BISS, EDI-BD, trait FNAE, RSES, and W-IAT-Time 2 approximated the normal distribution and the *SW* statistic was not significant (*p*s >.08). The *SW* statistic was significant for all remaining variables. However, for MCSDS-C, BIAS Current, BIAS Ideal, BIAS-BD, state and trait FNAE, Appearance Schemas Activation, and W-IAT-Time 1, plots approximated the normal distribution, skewness values were within the acceptable range of ±2, and kurtosis values were within the acceptable range of ±3. Additionally, transformations applied to these variables did not result in improvements on any metric, and produced several outlying values. Consequently, non-transformed values were used for each of these measures in all analyses.

In contrast, a square root transformation was applied to the BDI scores to correct for moderate positive skewness and kurtosis. After applying the transformation, although the *SW*

statistic remained significant, the data better approximated the normal curve and values of skewness and kurtosis were improved to within acceptable ranges. Next, to correct for substantial positive skewness, an inverse transformation was applied to BMI. Once again, although the *SW* statistic remained significant, visual inspection of plots and histograms revealed that the data more closely approximated the normal distribution and values of skewness and kurtosis were within acceptable ranges. Of note, when a transformation has been applied to a scale the median is the most appropriate measure of central tendency (Tabachnick & Fidell, 2007).

Table 6

Descriptive Data for All Measures (N=235)

Variable	Range	*M*	Median	*SD*	Cronbach's α
BMI*	15.18 – 43.00	24.71	23.05	5.59	---
BMI- Self-report	15.49 – 48.28	24.02	22.46	5.52	---
BDI-II*	0.00 – 56.00	13.57	11.00	9.98	.91
MCSDS-C	0.00 – 13.00	6.27	6.00	2.89	.70
RSES	5.00 – 30.00	19.85	20.00	5.40	.89
EDI-2-BD	11.00 – 54.00	31.51	32.00	9.45	.87
ASI-R-SES	1.58 – 4.75	3.33	3.37	0.66	.83
FNAE - Trait	6.00 – 30.00	18.04	18.00	6.26	.92
W-IAT - Time1	-0.66 – 1.50	0.58	0.58	0.41	---
App schema	0.00 – 12.00	4.45	4.00	2.36	---
BISS	1.50 – 9.00	5.21	5.21	1.48	.86
BIAS-BD - Current	16.90 – 39.50	27.09	26.80	6.15	---
BIAS-BD - Ideal	16.90 – 33.80	22.27	22.26	4.09	---
BIAS-Discrepancy	-11.30 – 19.80	4.83	4.30	5.27	---
FNAE - State	6.00 – 30.00	16.29	16.00	5.89	.93
W-IAT - Time 2	-0.67 – 1.40	0.43	0.46	0.38	---

Note. BMI = Body Mass Index; BDI-II = Beck Depression Inventory; MCSDS-C = Marlowe Crowne Social Desirability Scale – Form C; RSES = Rosenberg Self-Esteem Scale; EDI-BD = Eating Disorders Inventory - 2 - Body Dissatisfaction Scale; ASI-R –SES = Appearance Schema Inventory-Revised –Self Evaluative Salience Scale; FNAE = Fear of Negative Appearance Evaluation; W-IAT= Weight Implicit Associations Test; App schema = Appearance Schemas Activation – Word Stem Completion Task; BISS = Body Image States Scale; BIAS-BD = Body Image Assessment Scale – Body Dimensions.

* Indicates the variable was transformed prior to further analyses, and the median is the more appropriate measure of central tendency.

Group Equivalence on Potential Covariates and Moderator

A series of *t* tests were conducted to identify possible group differences on all potential covariates and on the continuous moderating variable of maladaptive appearance investment. There were no significant differences in BMI, depression, trait self-esteem, socially desirable responding, or maladaptive appearance investment across media conditions ($ps \geq .161$). As such, randomization appears to have been successful in creating equal groups.

Credibility of the Cover Story

During the debriefing, participants were asked questions about what they believed the study was about in order to assess the credibility of the cover story. Individuals who reported suspicions that the study was about body image or anti-fat attitudes were queried further as to what they thought the study hypotheses were. A total of 168 participants (71.5% of the sample) reported vague suspicions that the study related to body image or anti-fat attitudes in some way. However, only 11 participants (4.7%) guessed a specific study hypothesis. Additionally, 57.9% of participants spontaneously reported that the study was about memory in some way. These data suggests that the cover story was reasonably effective in obscuring the true nature of the study.

Nevertheless, to control for any effect that these suspicions might have had on the results, two dichotomous variable were computed, one for general suspicions about body image, and one for having guessed specific study hypotheses. For each variable, participants who suspected body image or had guessed a hypothesis were coded 1. All other participants were coded 0. Each variable was tested as a covariate in the hierarchical regression analyses. However, neither variable was a significant covariate in any analysis, and their inclusion did not alter the results. Consequently, these variables were removed and do not appear in any of the regression results reported below.

Testing Assumptions

Hierarchical multiple regressions. Multiple regression assumes the absence of outliers among the predictor and outcome variables, as well as absence of outliers in the solution (Tabachnick & Fidell, 2007). In the preliminary steps of analysis, 5 univariate outliers were identified and reduced. Multivariate outliers were assessed through examining Mahalanobis distances. Cut-off values were determined using the Chi squared distribution. Although the inclusion of multivariate outliers did not change the pattern of significant findings for any of the analyses, these outliers did influence the regression coefficients. Only outliers that impacted the regression coefficients in the final model were excluded from analyses (Tabachnick & Fidell, 2007). Given that identification of multivariate and residual outliers depends upon the predictors entered in each model, they were identified separately for each regression. A total of 5 multivariate outliers were removed from all regression analyses. Removal of additional multivariate outliers for each regressions was as follows: 3 from the regression for body satisfaction ($N = 227$); 1 from the regression for fear of negative appearance evaluation ($N = 229$); 8 from the regression for implicit anti-fat attitudes ($N = 222$); 1 from the regression for appearance schemas activation ($N = 229$); 2 from the regression for self-ideal discrepancies ($N = 228$); 1 from the regression for current body size ($N = 229$); 3 from the regression for ideal body size ($N = 227$). Multivariate outliers for each regression were inspected for unifying characteristics (e.g., BMI, age, years in school, ethnic background, relationship status, etc.) to determine whether they were representative of specific subsets of participants, but no such commonalities were identified. Potential remaining outliers in the regression solution were assessed by inspection of residual plots and standardized residuals, and none remained following the removal of multivariate outliers.

The assumption of no perfect multicollinearity was assessed by examining intercorrelations between variables and checking the variance inflation factors (Tabachnik & Fidell, 2007). None of the VIFs had values that approached the cutoff of 10 (Field, 2005). Additionally, none of the variables had a correlation greater than |0.65| (see Table 7). The assumptions of normally distributed errors, linearity, and homoscedasticity were evaluated next. For each regression the histograms of standardized residuals approximated the normal curve. Additionally, scatterplots of standardized residual versus predicted residuals were approximately rectangular with scores concentrated evenly around the center. Consequently, it was concluded that the assumptions of linearity, homoscedasticity, and normally distributed errors had been met. Finally, for each regression the Durbin-Watson statistic was examined, and error terms were found to be independent.

Table 7

Intercorrelations Between All Study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. BMI -Inverse	-													
2. BDI-II -SQRT	-.05	-												
3. MCSDS-C	.02	-.29**	-											
4.RSES	-.01	-.65**	.29**	-										
5.ASI-R-SES	-.11	.41**	-.32**	-.35**	-									
6.BISS	.39**	-.40**	.15*	.38**	-.43**	-								
7. BIAS-BD -Current	-.73**	.10	-.05	-.10	.21**	-.51**	-							
8. BIAS-BD-Ideal	-.42**	-.03	.04	.01	-.09	-.10	.54**	-						
9. BIAS-Discrepancy	-.53**	.14*	-.09	-.12	.32**	-.52**	.76**	-.14*	-					
10. FNAES -S	-.10	.43**	-.30**	-.46**	.70**	-.45**	.21**	-.08	.31**	-				
11. W-IAT- Time 2	-.04	-.01	-.00	.09	.06	.01	.01	-.13*	.11	-.00	-			
12. App. schemas	.03	-.07	.00	.00	.03	.02	-.03	-.09	.03	.05	.22**	-		
13. EDI-2-BD	-.54**	.32**	-.18**	-.28**	.44**	-.59**	.61**	.10	.64**	.35**	.12	.05	-	
14. FNAE	-.20**	.45**	-.31**	-.38**	.77**	-.45**	.25**	-.04	.33**	.79**	.08	.08	.47**	-
15. W-IAT Time 1	.08	-.01	-.02	.10	.01	.04	-.16*	-.10	-.12	.04	.29**	.16*	-.06	.08

Note. Inverse transformations change the direction of correlations; $^{*}p < .05$, $^{**}p < .01$
BMI = Body Mass Index, inverse transformation applied; BDI-II-SQRT= Beck Depression Inventory-II, square root transformation applied; MCSDS-C = Marlowe Crowne Social Desirability Scale – Form C; RSES = Rosenberg Self-Esteem Scale; ASI-R –SES = Appearance Schema Inventory-Revised –Self Evaluative Salience Scale; BISS = Body Image States Scale; BIAS-BD = Body Image Assessment Scale – Body Dimensions; FNAES-S = Fear of Negative Appearance Evaluation –State version; W-IAT= Weight Implicit Associations Test; App schemas = Appearance Schemas Activation – Word Stem Completion Task; Eating Disorders Inventory - 2 - Body Dissatisfaction Scale

Logistic regression. A sufficient ratio of cases to variables was clearly present, as the sample consisted of 235 participants and only 4 predictors were included in the regression equation. Bivariate correlations between predictors and standard errors for parameter estimates were reviewed to assess for multicollinearity. There were no excessively large standard errors and no correlations exceeded .77, indicating that the assumption of absence of multicollinearity had been met (see Table 7). To assess the assumption of linearity in the logit, the Box Tidwell approach was used (Hosmer & Lemeshow, 2000). A linear association was identified between the continuous independent variables and the logit of the dependent variable, *p*s > .193. An examination of residuals revealed no outlying values. Independence of errors was assumed given the study design (Tabachnik & Fidell, 2007).

Main Analyses: Multiple Regression

All study hypotheses, with the exception of hypothesis 2, were tested with a series of seven hierarchical multiple regressions for the following dependent variables: body satisfaction (BISS), state fear of negative appearance evaluation (FNAES-S), implicit anti-fat attitudes (assessed following media exposure; W-IAT- Time 2), appearance schemas activation (word-stem completion task), self-ideal body size discrepancies (BIAS-BD), current body size (BIAS-BD-Current), and ideal body size (BIAS-BD-Ideal). Covariates that were significantly correlated with each dependent variable were entered into the respective regression analysis in Step 1. Covariates that did not contribute significantly to the model were removed, and each regression was conducted again with only the significant covariates included (Field, 2005). Media condition (neutral media condition coded 0 and derogatory media condition coded as 1), media selection (neutral selection coded 0 and derogatory selection coded 1), and maladaptive appearance investment were entered as main effects in Step 2. Both the Media Condition X Selection and Media Condition X Maladaptive Appearance Investment interaction terms were entered in Step 3. Selection X Maladaptive Appearance

Investment also was entered as an interaction term in order to allow for accurate estimation of the 3-way interaction. However, it was not examined as the primary interest in this study pertains to the main effects of media condition, and its interactive effects with media selection and maladaptive appearance investment. Finally, the Media Condition X Selection X Maladaptive Appearance Investment interaction term was entered in Step 4. All continuous variables were centered prior to computing the interaction terms (Tabachnick & Fidell, 2007). All study hypotheses and results are summarized in Table 8.

Table 8

Summary of Results

Hypotheses	Results
Replicating and Extend Past Findings	
1. Compared to women in the neutral media condition, women exposed to weight-based derogatory media were expected to respond with lower state body satisfaction and greater fear of negative appearance evaluation, self-ideal discrepancies, implicit anti-fat attitudes, and appearance schemas activation.	Partially supported: Compared to women in the neutral media condition, women who viewed weight-based derogatory media exhibited greater self-ideal discrepancies, implicit anti-fat attitudes, and appearance schemas activation. No significant differences emerged on measures of state body satisfaction or fear of negative appearance evaluation.
Support for Reinforcing Spirals Theory	
2. Women's selection of weight-based derogatory media was expected to be predicted by greater body dissatisfaction, fear of negative appearance evaluation, implicit anti-fat attitudes, and maladaptive appearance investment.	Not supported: No variables significantly predicted selection of weight-based derogatory media.
3. Women exposed to weight-based derogatory media after self-selecting them were predicted to report lower body satisfaction and greater fear of negative appearance evaluation, self-ideal discrepancies, implicit anti-fat attitudes, and appearance schemas activation than would women randomly assigned to these media.	Not supported: Women exposed to weight-based derogatory media after self-selecting them did not differ from women randomly assigned to view these media on any study variables.
Clarifying Defensive Responding	
4. Women low in maladaptive investment were expected to report lower body satisfaction and greater self-ideal discrepancies following exposure to weight-based derogatory media, whereas women high in maladaptive appearance investment would respond defensively, and would not differ in body satisfaction or self-ideal discrepancies across the neutral and weight-based derogatory media conditions.	Not supported: Maladaptive appearance investment did not significantly moderate the effect of media exposure on self-ideal discrepancies or body satisfaction.
5. Maladaptive appearance investment was expected to moderate the impact of weight-based derogatory media on reports of current body size. Following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner current body size than would both lowly invested women in the derogatory condition, and women in the neutral media condition. Among women low in maladaptive appearance investment, reports of current body size were not expected to differ significantly across the neutral and weight-based derogatory media conditions.	Not supported: Maladaptive appearance investment did not significantly moderate the effect of media exposure on current body size.
6. Maladaptive appearance investment was predicted to moderate the impact of weight-based derogatory media on reports of ideal size. Following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner ideal body size than	Not supported: Maladaptive appearance investment did not significantly moderate the effect of media exposure on ideal body size.

would lowly invested women and women exposed to neutral media.	
Defensive Responding + Reinforcing Spirals Theory	
7. Women low in maladaptive appearance investment who viewed the derogatory media after self-selecting them were expected to report lower body satisfaction and greater self-ideal discrepancies than would lowly invested women who viewed the derogatory media following random assignment. Women high in maladaptive appearance investment were not expected to differ significantly in body satisfaction or self-ideal discrepancies, regardless of media selection or exposure to neutral or derogatory media.	Not supported: The 3-way interaction between maladaptive appearance investment, media exposure, and media selection was not significant for state body satisfaction or self-ideal discrepancies.
8. Women high in maladaptive appearance investment were predicted to report the thinnest current and ideal body sizes following self-selected exposure to weight-based derogatory media.	Not supported: The 3-way interaction between maladaptive appearance investment, media exposure, and media selection was not significant for either current or ideal body size.
Exploratory Analyses	
Exposure to weight-based derogatory media resulted in a significant increase in implicit anti-fat attitudes from pre-exposure to post-exposure.	Not supported: Women's implicit anti-fat attitudes significantly decreased following exposure to the neutral media condition, while there were no significant changes in implicit-anti-fat attitudes following exposure to weight-based derogatory media.

Body Satisfaction

The first regression examined predictors of body satisfaction, and pertains to hypotheses 1, 3, 4, and 7. Specifically, compared to the neutral media condition, women exposed to weight-based derogatory media were predicted to report lower body satisfaction (hypothesis 1 – main effect of media condition). Additionally, women who were exposed to the derogatory media after self-selecting them were expected to report lower body satisfaction than women randomly assigned to these media (hypothesis 3 – Media Condition X Media Selection interaction). Further, women low in maladaptive investment were expected to report lower body satisfaction following exposure to weight-based derogatory media, whereas women high in maladaptive appearance investment were expected to respond defensively, and were not expected to differ in body satisfaction across media conditions (hypothesis 4 – Media Condition X Maladaptive Appearance Investment interaction). Finally, women low in maladaptive appearance investment who viewed the derogatory media after self-selecting them were expected to report lower body satisfaction than would lowly invested women who viewed the derogatory media following random assignment (hypothesis 7 – Media Condition X Media Selection X Maladaptive Appearance Investment interaction). Women high in maladaptive appearance investment were not expected to differ in body satisfaction, regardless of media selection or media condition.

Table 9 provides a summary of the final regression model. Socially desirable responding was not a significant covariate, and was removed from the model. Consequently, Step 1 included three covariates, trait self-esteem, BMI, and depression. With only the covariates included, the model was significant, $F(3,223) = 34.47$, $p < .001$, and accounted for 31.7% of the variance in body satisfaction. Each of the covariates contributed significantly to the model (ps < .01). In step 2, the addition of maladaptive appearance investment, media condition, and media selection significantly improved the

prediction of body satisfaction, *F*change (3,220) = 6.14, *p* = .001, accounting for a further 5.3% of the variance. Examination of the model revealed that only maladaptive appearance investment significantly improved the prediction of body satisfaction, β = -.20, *t* = -3.81, *p* < .001. The squared partial correlation between maladaptive appearance investment and body satisfaction was .06, which is defined by Cohen (1988) as a small effect size. Counter to predictions, media condition and media selection were not significant predictors (*p*s > .08). In Step 3, the addition of the 2-way interaction terms between media condition, media selection, and maladaptive appearance investment did not improve prediction of body satisfaction, *F*change (3,217) = 0.26, *p* = 853. Similarly, adding the 3-way interaction term also did not improve the model, *F*change (1,216) = 0.01, *p* = .912.

Table 9

Final Hierarchical Regression Model for Body Satisfaction (N = 227)

Step	*R*	R^2	R^2 change	Variables entered	*b*	*SE b*	β	*t*	*p*-value
1	.56	.32	.32	Constant	1.65	0.81	-	2.04	.042
				RSES	0.07	0.02	0.24	3.18	.002
				BMI (Inverse)	71.38	10.20	0.39	7.00	.000
				BDI-II (SQRT)	-0.22	0.08	-0.20	-2.67	.008
2	.61	.37	.05	Constant	2.18	0.79	-	2.74	.007
				RSES	0.05	0.02	0.20	2.69	.008
				BMI (Inverse)	64.62	10.02	0.35	6.45	.000
				BDI-II (SQRT)	-0.17	0.08	-0.15	-2.09	.038
				ASI-R-SES	-0.53	0.14	-0.22	-3.81	.000
				Media condition	-0.27	0.16	-0.09	-1.74	.083
				Media selection	-0.13	0.17	-0.04	-0.75	.455
3	.61	.37	.00	Constant	2.17	0.81	-	2.69	.008
				RSES	0.05	0.02	0.19	2.61	0.01
				BMI (Inverse)	63.99	10.13	0.35	6.32	.000
				BDI-II (SQRT)	-0.17	0.08	-0.15	-2.08	.039
				ASI-R-SES	-0.43	0.21	-0.18	-2.10	.037
				Media condition	-0.20	0.19	-0.07	-1.06	.291
				Media selection	0.01	0.27	0.00	0.03	.979
				Condition X Selection	-0.21	0.35	-0.06	-0.51	.543
				Condition X ASI-R-SES	-0.11	0.26	-0.03	-0.41	.683
				Selection X ASI-R-SES	-0.11	0.28	-0.03	-0.39	.697
4	.61	.37	.00	Constant	2.19	0.82	-	2.67	.008
				RSES	0.05	0.20	0.19	2.60	.010
				BMI (Inverse)	63.85	10.23	0.35	6.24	.000
				BDI-II (SQRT)	-0.17	0.08	-0.15	-2.08	.039
				ASI-R-SES	-0.44	0.22	-0.19	-1.99	.048
				Media condition	-0.20	0.19	-0.07	-1.06	.291
				Media selection	0.01	0.27	0.00	0.03	.977
				Condition X Selection	-0.21	0.35	-0.06	-0.61	.544
				Condition X ASI-R-SES	-0.09	0.32	-0.03	-0.29	.775
				Selection X ASI-R-SES	-0.07	0.46	-0.02	-0.15	.880
				Condition X Selection X ASI-R-SES	-0.07	0.58	-0.01	-0.11	.912

Note. BMI (Inverse) = Body Mass Index, inverse transformation applied; BDI-II (SQRT) = Beck Depression Inventory-II, square root transformation applied; RSES = Rosenberg Self-Esteem Scale; ASI-R-SES = Appearance Schema Inventory-Revised-Self Evaluative Salience Scale

Fear of Negative Appearance Evaluation

The second regression examined predictors of state fear of negative appearance evaluation, and pertains to hypotheses 1 and 3. Specifically, compared to the neutral media condition, women who viewed weight-based derogatory media were expected to report greater fear of negative appearance evaluation (hypothesis 1 – main effect of media condition). Further, women who were exposed to the derogatory media after self-selecting them were expected to report greater fear of negative appearance evaluation than women randomly assigned to view these media (hypothesis 3 – Media Condition X Media Selection interaction).

The final regression model is summarized in Table 10. Depression, BMI, and socially desirable responding were not significant covariates and were removed from the model. With only trait self-esteem included as a covariate, the model was significant, $F(1,227) = 60.46$, $p < .001$, and accounted for 21.0% of the variance in fear of negative appearance evaluation. In Step 2, adding maladaptive appearance investment, media condition, and media selection significantly improved the prediction of fear of negative appearance evaluation, Fchange $(3,224) = 54.48$, $p < .001$, accounting for a further 33.3% of the variance. Examination of the model revealed that only maladaptive appearance investment contributed significantly to the model, $\beta = .61$, $t = 8.19$, $p < .001$. The squared partial correlation between maladaptive appearance investment and fear of negative appearance evaluation was .23, which is defined by Cohen (1988) as a moderate to large effect size. Contrary to predictions, neither media condition or media selection were significant predictors (ps > .36). In Step 3, the addition of the 2-way interaction terms between media condition, media selection, and maladaptive appearance investment, did not improve prediction of fear of negative appearance evaluation, Fchange $(3,221) = 0.41$, $p = .746$. Adding the 3-way interaction term also failed to improve the model, Fchange $(1,220) = 1.17$, $p = .281$.

Table 10

Final Hierarchical Regression Model for Fear of Negative Appearance Evaluation (N = 229)

Step	*R*	R^2	R^2 change	Variables entered	*b*	*SE b*	β	*t*	*p*-value
1	.46	.21	.21	Constant	26.38	1.31	-	20.15	.000
				RSES	-0.50	0.06	-0.46	-7.78	.000
2	.74	.54	.33	Constant	21.31	1.10	-	19.38	.000
				RSES	-0.25	0.05	-0.23	-4.78	.000
				ASI-R-SES	5.71	0.45	0.62	12.72	.000
				Media condition	-0.07	0.53	-0.01	-0.14	.892
				Media selection	0.51	0.56	0.04	0.91	.362
3	.74	.55	.00	Constant	21.13	1.14	-	18.60	.000
				RSES	-0.25	0.05	-0.23	-4.61	0.00
				ASI-R-SES	5.62	0.69	0.61	8.19	.000
				Media condition	0.10	0.64	0.01	0.15	.877
				Media selection	0.80	0.88	0.07	0.91	.365
				Condition X Selection	-0.51	1.14	-0.04	-0.45	.655
				Condition X ASI-R-SES	0.64	0.87	0.05	0.74	.462
				Selection X ASI-R-SES	-0.73	0.90	-0.05	-0.81	.388
4	.74	.55	.00	Constant	21.14	1.14	-	18.61	.000
				RSES	-0.25	0.05	-0.23	-4.60	.000
				ASI-R-SES	5.31	0.75	0.57	7.11	.000
				Media condition	0.09	0.64	0.01	0.14	.889
				Media selection	0.79	0.88	0.07	0.90	.367
				Condition X Selection	-0.50	1.14	-0.03	-0.43	.666
				Condition X ASI-R-SES	1.26	1.04	0.10	1.22	.226
				Selection X ASI-R-SES	0.54	1.47	0.03	0.37	.716
				Condition X Selection X ASI-R-SES	-2.01	1.86	-0.11	-1.08	.281

Note. RSES = Rosenberg Self-Esteem Scale; ASI-R-SES = Appearance Schema Inventory-Revised-Self Evaluative Salience Scale

Implicit Anti-Fat Attitudes

The third regression examined predictors of implicit anti-fat attitudes and addressed hypotheses 1 and 3. Specifically, compared to the neutral media condition, women who viewed weight-based derogatory media were predicted to exhibit greater implicit anti-fat attitudes (hypothesis 1 – main effect of media condition). Further, women who were exposed to the derogatory media after self-selecting them were expected to display greater implicit anti-fat attitudes than women randomly assigned to view these media (hypothesis 3 – Media Condition X Media Selection interaction).

The final regression model is summarized in Table 11. None of the potential covariates were significant, therefore, they were removed from the model. With maladaptive appearance investment, media condition, and media selection included in Step 1, the model was significant, $F(3,218) = 2.93$, $p = .034$, accounting for 3.9% of the variance. However, only media condition significantly contributed to the prediction of implicit anti-fat attitudes, $\beta = .19$, $t = 2.81$, $p = .005$. Specifically, individuals exposed to weight-based derogatory media exhibited significantly greater implicit anti-fat attitudes than women in the neutral media condition. The squared partial correlation between media condition and implicit anti-fat attitudes was .03, which is defined by Cohen (1988) as a small effect size. Neither maladaptive appearance investment nor media selection were significant predictors (ps > .34). Adding the 2-way interaction terms between media condition, media selection, and maladaptive appearance investment did not improve the model, Fchange $(3,215) = 0.94$, $p = .420$., nor did the addition of the 3-way interaction term, Fchange $(1,214) = 0.61$, $p = .437$.

Table 11

Final Hierarchical Regression Model for Implicit Anti-Fat Attitudes (N = 222)

Step	*R*	R^2	R^2 change	Variables entered	*b*	*SE b*	β	*t*	*p*-value
1	.20	.04	.04	Constant	0.36	0.04	-	9.12	.000
				ASI-R-SES	0.04	0.04	0.06	0.94	.348
				Media condition	0.14	0.05	0.19	2.81	.005
				Media selection	0.00	0.06	-0.00	-0.01	.993
2	.23	.05	.01	Constant	0.37	0.04	-	8.56	.000
				ASI-R-SES	0.11	0.06	0.17	1.64	.102
				Media condition	0.12	0.06	0.16	2.01	.046
				Media selection	-0.04	0.09	-0.05	-0.47	.642
				Condition X Selection	0.08	0.11	0.09	0.72	.470
				Condition X ASI-R-SES	-0.12	0.09	-0.15	-1.41	.161
				Selection X ASI-R-SES	-0.01	0.09	-0.00	-0.05	.958
3	.23	.05	.00	Constant	0.37	0.04	-	8.52	.000
				ASI-R-SES	0.12	0.07	0.20	1.80	.073
				Media condition	0.12	0.06	0.16	2.02	.045
				Media selection	-0.06	0.09	-0.07	-0.60	.546
				Condition X Selection	0.10	0.12	0.10	0.89	.414
				Condition X ASI-R-SES	-0.16	0.10	-0.19	-1.61	.110
				Selection X ASI-R-SES	-0.13	0.18	-0.11	-0.69	.489
				Condition X Selection X ASI-R-SES	0.17	0.21	0.13	0.78	.437

Note. ASI-R-SES = Appearance Schema Inventory-Revised-Self Evaluative Salience Scale

Appearance Schemas Activation

The fourth regression examined predictors of appearance schemas activation, and relates to hypotheses 1 and 3. Specifically, compared to the neutral media condition, women who viewed weight-based derogatory media were expected to display greater appearance schemas activation (hypothesis 1 – main effect of media condition). Additionally, women who were exposed to the derogatory media after self-selecting them were expected to exhibit greater appearance schemas activation than would women randomly assigned to view these media (hypothesis 3 – Media Condition X Media Selection interaction).

The final regression model is summarized in Table 12. None of the potential covariates were significant, and thus they were not included in the final model. Consequently, maladaptive appearance investment, media condition, and media selection were entered in Step 1. The model was significant, $F(3,225) = 7.75$, $p < .001$, accounting for 9.4% of the variance. Upon inspection, only media condition contributed significantly to the model, $\beta = .29$, $t = 4.55$, $p < .001$. Specifically, individuals who viewed weight-based derogatory media exhibited significantly greater appearance schemas activation than did women in the neutral media condition. The squared partial correlation between media condition and appearance schemas activation was .08, which is considered a small to medium effect size (Cohen, 1988). Both media selection and maladaptive appearance investment failed to contribute significantly to the model (ps > .27). None of the 2-way interaction terms contributed, Fchange $(3,215) = 0.94$, $p = .420$, nor did the addition of the 3-way interaction term, Fchange $(1,214) = 0.61$, $p = .437$.

Table 12

Final Hierarchical Regression Model for Appearance Schemas Activation (N = 229)

Step	*R*	R^2	R^2 change	Variables entered	*b*	*SE b*	β	*t*	*p*-value
1	.31	.09	.09	Constant	3.59	0.23	-	15.51	.000
				ASI-R-SES	0.25	0.23	0.07	1.10	.274
				Media condition	1.32	0.29	0.29	4.55	.000
				Media selection	0.26	0.31	0.05	0.85	.394
2	.32	.10	.01	Constant	3.69	0.26	-	14.49	.000
				ASI-R-SES	0.15	0.37	0.04	0.40	.692
				Media condition	1.14	0.35	0.25	3.25	.001
				Media selection	-0.10	0.49	-0.02	-0.21	.833
				Condition X Selection	0.60	0.63	0.11	0.94	.347
				Condition X ASI-R-SES	0.30	0.47	0.06	0.63	.532
				Selection X ASI-R-SES	-0.23	0.50	-0.04	-0.45	.650
3	.32	.10	.00	Constant	3.69	0.26	-	14.45	.000
				ASI-R-SES	0.13	0.40	0.04	0.32	.746
				Media condition	1.139	0.35	0.25	3.24	.001
				Media selection	-0.10	0.49	-0.02	-0.21	.834
				Condition X Selection	0.60	0.64	0.11	0.94	.348
				Condition X ASI-R-SES	0.33	0.57	0.07	0.58	.565
				Selection X ASI-R-SES	-0.16	0.81	-0.03	-0.20	.846
				Condition X Selection X ASI-R-SES	-0.11	1.03	-0.01	-0.10	.919

Note. ASI-R-SES = Appearance Schema Inventory-Revised-Self Evaluative Salience Scale

Self-Ideal Discrepancies

The fifth regression examined predictors of body size self-ideal discrepancies, which denote body dissatisfaction. This regression analysis pertains to hypotheses 1, 3, 4, and 7. Specifically, when compared with the neutral media condition, women exposed to weight-based derogatory media were predicted to exhibit greater self-ideal discrepancies (hypothesis 1 – main effect of media condition). Women who viewed the derogatory media after self-selecting them were predicted to display greater self-ideal discrepancies than women randomly assigned to these media (hypothesis 3 – Media Condition X Media Selection interaction). Additionally, women low in maladaptive investment were expected to exhibit greater self-ideal discrepancies after viewing weight-based derogatory media, whereas women high in maladaptive appearance investment were not expected to differ in self-ideal discrepancies, regardless of media selection or exposure to neutral or derogatory media (hypothesis 4 – Media Condition X Maladaptive Appearance Investment interaction). Finally, women low in maladaptive appearance investment who were exposed to the derogatory media after self-selecting them were expected to display greater self-ideal discrepancies than would lowly invested women who viewed the derogatory media following random assignment (hypothesis 7 – Media Condition X Media Selection X Maladaptive Appearance Investment interaction). Women high in maladaptive appearance investment were not expected to differ in self-ideal discrepancies.

The final regression model is summarized in Table 13. Depression, trait self-esteem, and socially desirable responding were not significant covariates and were removed from the model. With only BMI included as a covariate, the model was significant, $F(1,226) = 109.29$, $p < .001$, accounting for 32.3% of the variance. In Step 2, the addition of maladaptive appearance investment, media condition, and media selection significantly improved the prediction of self-ideal discrepancies, Fchange $(3,223) = 7.10$, $p < .001$, accounting for a further 5.9% of the variance. Only

maladaptive appearance investment and media condition contributed significantly to the increase in prediction. Specifically, greater maladaptive appearance investment predicted greater self-ideal discrepancies, $\beta = .21$, $t = 3.88$, $p < .001$. The squared partial correlation between maladaptive appearance investment and self-ideal discrepancies was .04, which is considered a small effect size (Cohen, 1988). Additionally, compared to the neutral media condition, women in the derogatory media condition exhibited greater self-ideal discrepancies, $\beta = .14$, $t = 2.56$, $p = .011$. The squared partial correlation between media condition and self-ideal discrepancies was .03, which is considered a small effect size (Cohen, 1988). Addition of the 2-way interaction terms failed to improve the model, Fchange $(3,220) = 0.19$, $p = .192$. Similarly, the addition of the 3-way interaction term also failed to yield any improvements in prediction, Fchange $(1,219) = 0.61$, $p = .608$.

Table 13

Final Hierarchical Regression Model for Self-Ideal Discrepancies (N = 228)

Step	*R*	R^2	R^2 change	Variables entered	*b*	*SE b*	β	*t*	*p*-value
1	.57	.33	.33	Constant	20.03	1.45	-	13.79	.000
				BMI (Inverse)	-354.42.	33.90	-0.57	-10.45	.000
2	.62	.39	.06	Constant	18.38	1.47	-	12.50	.000
				BMI (Inverse)	-336.49	33.01	-0.54	-10.19	.000
				ASI-R-SES	1.66	0.43	0.21	3.88	.000
				Media condition	1.37	0.54	0.14	2.56	.011
				Media selection	0.28	0.57	0.03	0.49	.627
3	.62	.39	.00	Constant	18.42	1.49	-	12.36	.000
				BMI (Inverse)	-337.84	33.31	-0.54	-10.14	.000
				ASI-R-SES	2.03	0.68	0.25	2.98	.003
				Media condition	1.36	0.65	0.13	2.08	.039
				Media selection	0.24	0.90	0.02	0.26	.793
				Condition X Selection	0.12	1.16	0.01	0.10	.919
				Condition X ASI-R-SES	-0.62	0.88	-0.06	-0.71	.476
				Selection X ASI-R-SES	-0.09	0.92	-0.01	-0.10	.918
4	.62	.39	.00	Constant	18.33	1.50	-	12.20	.000
				BMI (Inverse)	-336.01	33.55	-0.54	-10.01	.000
				ASI-R-SES	2.18	0.74	0.27	2.94	.004
				Media condition	1.36	0.65	0.13	2.09	.038
				Media selection	0.24	0.90	0.02	0.27	.788
				Condition X Selection	0.11	1.16	0.01	0.09	.928
				Condition X ASI-R-SES	-0.93	1.06	-0.09	-0.88	.381
				Selection X ASI-R-SES	-0.70	1.50	-0.05	-0.47	.640
				Condition X Selection X ASI-R-SES	0.98	1.90	0.06	0.51	.608

Note. BMI (Inverse) = Body Mass Index, inverse transformation applied; ASI-R-SES = Appearance Schema Inventory-Revised-Self Evaluative Salience Scale

Current Body Size

The sixth regression examined predictors of perceived current body size, and pertains to hypotheses 5 and 8. Specifically, maladaptive appearance investment was hypothesized to moderate the impact of weight-based derogatory media on reports of current body size such that, following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner current body size than both lowly invested women in the derogatory condition and women in the neutral media condition. Among women low in maladaptive appearance investment, reports of current body size were not expected to differ significantly across the neutral and weight-based derogatory media conditions (hypothesis 5 – Media Condition X Maladaptive Appearance Investment interaction). Additionally, women high in maladaptive appearance investment were predicted to report the thinnest current body size following self-selected exposure to weight-based derogatory media (hypothesis 8 – Media Condition X Media Selection X Maladaptive Appearance Investment interaction).

The final regression model is summarized in Table 14. Depression, trait self-esteem, and socially desirable responding were not significant covariates and were from the model. With only BMI included as a covariate, the model was significant, $F(1,227) = 290.54$, $p < .001$, and accounted for 55.9% of the variance in current body size. In Step 2, adding maladaptive appearance investment, media condition, and media selection significantly improved the prediction of current body size, Fchange $(3,224) = 3.01$, $p = .031$, accounting for an additional 1.7% of the variance. Examination of the model revealed that only maladaptive appearance investment significantly improved the prediction of current body size, $\beta = .11$, $t = 2.39$, $p = .018$. The squared partial correlation between maladaptive appearance investment and current body size was .02, which is considered a small effect size (Cohen, 1988). Neither media condition or media selection were

significant predictors (*p*s > .15). In Step 3, the addition of the 2-way interaction terms between media condition, media selection, and maladaptive appearance investment, did not improve prediction of current body size, *F*change (3,221) = 0.25, *p* = .861. Further, adding the 3-way interaction term also failed to increase prediction, *F*change (1,220) = 0.13, *p* = .721.

Table 14

Final Hierarchical Regression Model for Current Body Size (N = 229)

Step	*R*	R^2	R^2 change	Variables entered	*b*	*SE b*	β	*t*	*p*-value
1	.75	.56	.56	Constant	51.21	1.44	-	35.59	.000
				BMI (Inverse)	-571.91.	33.55	-0.75	-17.05	.000
2	.76	.58	.02	Constant	49.95	1.50	-	33.42	.000
				BMI (Inverse)	-556.71	33.55	-0.73	-16.59	.000
				ASI-R-SES	1.04	0.43	0.11	2.39	.018
				Media condition	0.59	0.54	0.05	1.09	.278
				Media selection	0.83	0.58	0.06	1.43	.153
3	.76	.58	.00	Constant	50.01	1.52	-	33.01	.000
				BMI (Inverse)	-554.99	33.83	-0.73	-16.40	.000
				ASI-R-SES	0.67	0.69	0.07	0.97	.333
				Media condition	0.36	0.66	0.03	0.54	.589
				Media selection	0.40	0.91	0.03	0.44	.657
				Condition X Selection	0.68	1.18	0.04	0.58	.566
				Condition X ASI-R-SES	0.46	0.89	0.04	0.53	.598
				Selection X ASI-R-SES	0.26	0.93	0.02	0.28	.778
4	.76	.58	.00	Constant	49.95	1.53	-	32.68	.000
				BMI (Inverse)	-553.71	34.09	-0.73	-16.24	.000
				ASI-R-SES	0.78	0.75	0.08	1.03	.304
				Media condition	0.36	0.66	0.03	0.55	.586
				Media selection	0.41	0.91	0.03	0.45	.655
				Condition X Selection	0.67	1.18	0.04	0.57	.570
				Condition X ASI-R-SES	0.26	1.06	0.02	0.24	.811
				Selection X ASI-R-SES	-0.17	1.52	-0.01	-0.11	.912
				Condition X Selection X ASI-R-SES	0.69	1.93	0.03	0.36	.721

Note. BMI (Inverse) = Body Mass Index, inverse transformation applied; ASI-R-SES = Appearance Schema Inventory-Revised-Self Evaluative Salience Scale

Ideal Body Size

The seventh regression examined predictors of ideal body size, and addresses hypotheses 6 and 8. Specifically, maladaptive appearance investment was hypothesized to moderate the impact of weight-based derogatory media on reports of ideal body size such that, following exposure to weight-based derogatory media, women high in maladaptive appearance investment would report a thinner ideal body size than would both lowly invested women in the derogatory condition and women in the neutral media condition (hypothesis 6 – Media Condition X Maladaptive Appearance Investment interaction). Additionally, women high in maladaptive appearance investment were expected to report the thinnest ideal body size following self-selected exposure to weight-based derogatory media (hypothesis 8 – Media Condition X Media Selection X Maladaptive Appearance Investment interaction).

Table 15 summarizes the final regression model. Depression, trait self-esteem, and socially desirable responding were not significant covariates and were not retained in the model. With only BMI included as a covariate, the model was significant, $F(1,225) = 50.71$, $p < .001$, and accounted for 18.4% of the variance in ideal body size. In Step 2, adding maladaptive appearance investment, media condition, and media selection did not significantly improve the prediction of ideal body size, Fchange $(3,222) = 1.86$, $p = .138$, but accounted for an additional 2.0% of the variance. In Step 3, the addition of the 2-way interaction terms did not improve prediction of current body size, Fchange $(3,219) = 1.24$, $p = .295$. Similarly, adding the 3-way interaction term also failed to improve the model, Fchange $(1,218) = 0.34$, $p = .559$.

Table 15

Final Hierarchical Regression Model for Ideal Body Size (N = 227)

Step	*R*	R^2	R^2 change	Variables entered	*b*	*SE b*	β	*t*	*p*-value
1	.43	.18	.18	Constant	30.98	1.27	-	24.40	.000
				BMI (Inverse)	-211.31.	29.67	-0.43	-7.12	.000
2	.45	.20	.02	Constant	31.65	1.33	-	23.74	.000
				BMI (Inverse)	-219.92	30.04	-0.45	-7.32	.000
				ASI-R-SES	-0.73	0.39	-0.11	-1.88	.061
				Media condition	-0.68	0.48	-0.09	-1.45	.149
				Media selection	0.29	0.51	0.03	0.57	.571
3	.47	.22	.01	Constant	31.50	1.35	-	23.41	.000
				BMI (Inverse)	-214.22	30.14	-0.44	-7.11	.000
				ASI-R-SES	-1.56	0.60	-0.25	-2.60	.010
				Media condition	-0.80	0.57	-0.10	-1.39	.166
				Media selection	0.15	0.79	0.02	0.19	.846
				Condition X Selection	0.10	1.03	0.01	0.10	.920
				Condition X ASI-R-SES	0.84	0.78	0.10	1.08	.280
				Selection X ASI-R-SES	1.14	0.82	0.10	1.39	.167
4	.47	.22	.00	Constant	31.41	1.36	-	23.17	.000
				BMI (Inverse)	-212.48	30.34	-0.43	-7.00	.000
				ASI-R-SES	-1.41	0.65	-0.22	-2.16	.032
				Media condition	-0.79	0.58	-0.10	-1.38	.169
				Media selection	0.16	0.79	0.02	0.20	.840
				Condition X Selection	0.09	1.03	0.01	0.09	.932
				Condition X ASI-R-SES	0.54	0.94	0.06	0.58	.565
				Selection X ASI-R-SES	0.54	1.32	0.05	0.41	.685
				Condition X Selection X ASI-R-SES	0.99	1.69	0.07	0.59	.559

Note. BMI (Inverse) = Body Mass Index, inverse transformation applied; ASI-R-SES = Appearance Schema Inventory-Revised-Self Evaluative Salience Scale

Main Analysis: Direct Logistic Regression

A direct logistic regression was used to test hypothesis 2, which stated that women's selection of weight-based derogatory media would be predicted by greater body dissatisfaction, fear of negative appearance evaluation, implicit anti-fat attitudes (measured online at Time 1), and maladaptive appearance investment. Table 16 summarizes the final model. All predictor variables were entered into the equation simultaneously: body dissatisfaction (EDI-2-BD), trait fear of negative appearance evaluation (FNAES), implicit anti-fat attitudes (W-IAT-Time 1), and maladaptive appearance investment (ASI-R-SES). For the outcome variable, selection of weight-based derogatory media was coded 1, and neutral media selection was coded 0.

The logistic regression model was not statistically significant, $\chi^2(4) = 2.14$, $p = .709$. The model explained only 1.3% (Nagelkerke R^2) of the variance in media selection, and correctly classified 66.4% of cases. The model did not correctly predict any of the individuals who selected the derogatory media. None of the individual predictor variables were statistically significant (ps $> .22$).

Table 16

Logistic Regression Predicting Selection of Derogatory Media (N=235)

						95% CI for Exp(B)	
	B	SE	Wald	*Exp(B)*	*Sig.*	Lower	Upper
W-IAT	0.42	0.35	1.44	1.52	.229	0.77	2.98
ASI-R-SES	-0.19	0.34	0.31	0.83	.577	0.43	1.61
FNAES	-0.00	0.04	0.00	1.00	.984	0.93	1.07
EDI-BD	0.01	0.02	0.36	1.01	.549	0.98	1.04
Constant	-0.60	0.82	0.54	0.55	.462		

Note. W-IAT = Weight Implicit Associations Test; ASI-R-SES = Appearance Schema Inventory-Revised-Self Evaluative Salience Scale; FNAES = Fear of Negative Appearance Evaluation Scale; EDI-BD= Eating Disorders Inventory - 2 - Body Dissatisfaction Scale.

Supplementary Analyses: Implicit Anti-Fat Attitudes

Consistent with predictions, planned analyses revealed that participants in the derogatory media condition exhibited significantly greater implicit anti-fat attitudes than participants in the neutral media condition. No other predictors contributed to this association. Given that implicit anti-fat attitudes were evaluated at two time-points (pre- and post-media exposure), this afforded the opportunity to investigate later predictions that exposure to weight-based derogatory media resulted in a significant increase in implicit anti-fat attitudes. A two-way mixed ANOVA was conducted to investigate, with implicit anti-fat attitudes as the dependent variable, time (pre-and post- media exposure) as the within-subjects factor, and media condition (neutral vs. derogatory) as the between-subjects factor. A Bonferonni correction was applied for these comparisons to correct for Type II error, as is recommended for post-hoc procedures with no a priori predictions (Field, 2005).

Assumptions of 2-way mixed ANOVA

Box plots and residuals were examined to identify outlying values in each cell of the design. A total of 7 outliers were identified for implicit anti-fat attitudes: 2 values in the neutral media condition post-exposure, 3 values in the derogatory media condition pre-exposure, and 3 values in the derogatory media condition post-exposure. All 7 values were reduced using Winsorization (Tabachnik & Fidell, 2007). Histograms, Q-Q plots, the Shapiro-Wilk (*SW*) statistic, and values of skewness and kurtosis were evaluated to determine whether implicit anti-fat attitudes were normally distributed in every cell of the design. The *SW* statistic was significant for pre-exposure values in the neutral media condition and post-exposure values in the derogatory media condition ($ps < .05$). However, all plots and histograms approximated the normal distribution, skewness values were within the acceptable range of ±2, and kurtosis values were within the acceptable range of ±3. Additionally, ANOVA is considered robust to violations of normality, particularly when sample sizes

are large and groups are roughly equal in size. The assumption of homogeneity of variances was met, as assessed by Levene's test of homogeneity of variance (*p*s > .555). Similarly, the assumption of homogeneity of covariances was met, as assessed by Box's test of equality of covariance matrices (*p* = .637). The assumption of sphericity was not assessed because the design included only two levels of repeated measures.

ANOVA results. There was a statistically significant interaction between media condition and time on implicit anti-fat attitudes, $F(1, 233) = 5.08$, $p = .0225$, partial $\eta^2 = .02$. Means, standard deviations, and confidence intervals are displayed in Table 16. Simple main effects were tested to clarify this interaction. Prior to media exposure, participants displayed no significant differences in implicit anti-fat attitudes across media conditions, $F(1,233) = 0.08$, $p = .782$, partial $\eta^2 = .00$. Following media exposure, participants in the derogatory media condition exhibited significantly greater implicit anti-fat attitudes than participants in the neutral media condition, $F(1,128) = 6.22$, $p = .013$, partial $\eta^2 = .03$. However, contrary to expectations, implicit anti-fat attitudes among participants in the derogatory media condition did not differ significantly from pre- to post- media exposure, $F(1,128) = 2.94$, $p = .089$, partial $\eta^2 = .02$. Instead, implicit anti-fat attitudes among women in the neutral media condition significantly decreased after viewing these media, $F(1,105) = 24.10$, $p < .001$, partial $\eta^2 = .19$ (see Figure 10).

Table 17

Means and Confidence Intervals for Implicit Anti-fat Attitudes (N = 235)

					95% Confidence Interval	
Media condition	Time	*N*	*M*	*SD*	Lower	Upper
Neutral media	1	106	0.58	0.39	0.50	0.65
	2	106	0.37	0.37	0.30	0.44
Derogatory media	1	129	0.56	0.42	0.49	0.63
	2	129	0.49	0.36	0.43	0.55

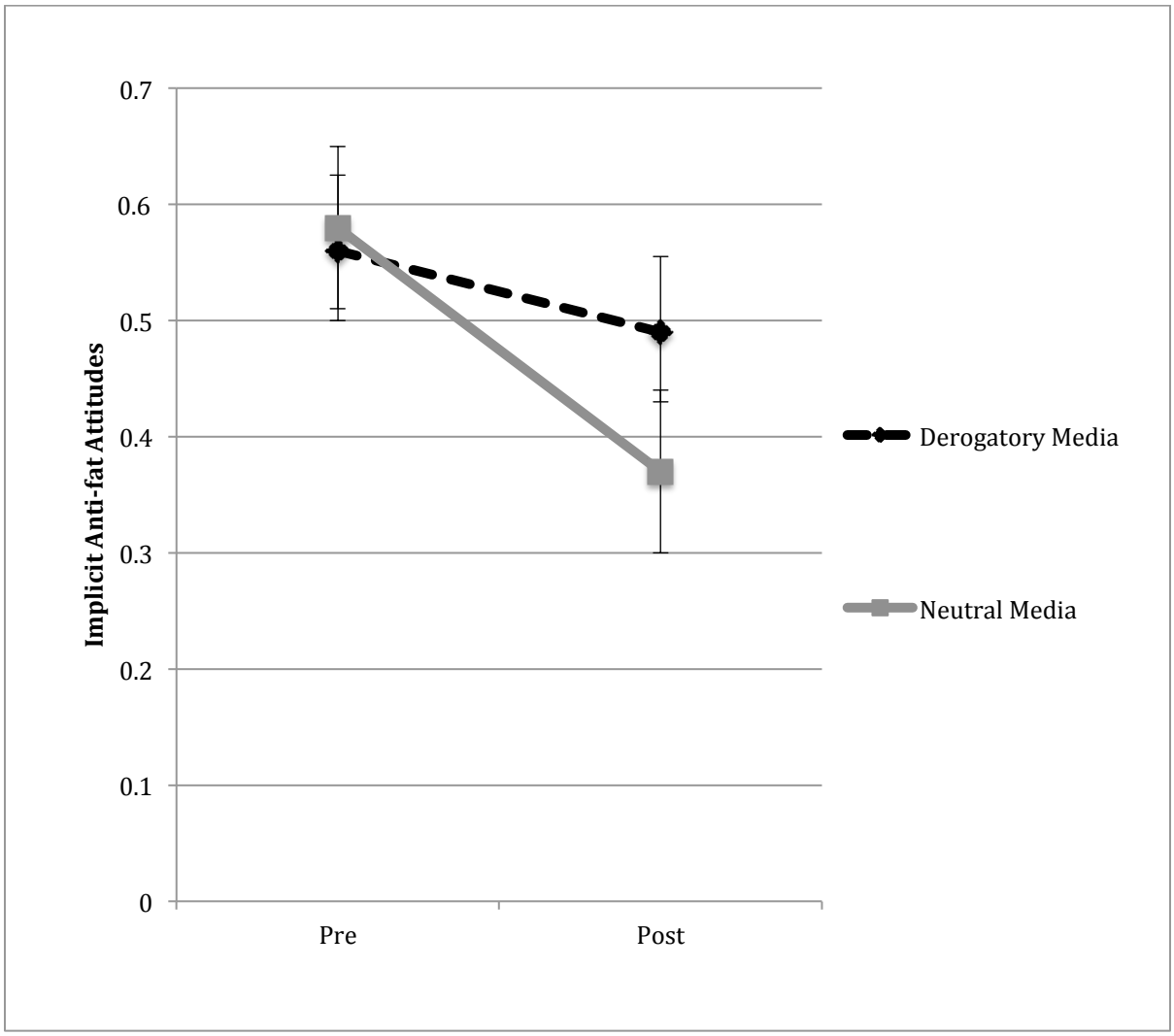

Figure 10. Implicit anti-fat attitudes among women in the neutral media condition significantly decreased from pre- to post- media exposure, whereas implicit anti-fat attitudes among participants in the derogatory media condition did not differ significantly. Error bars represent 95% confidence intervals.

CHAPTER V

Discussion

In the first published experimental investigation of exposure to weight-based derogatory media, Boersma and Jarry (2013) found that women exposed to weight derogatory media reported greater fear of negative appearance evaluation than women exposed to media with neutral content unrelated to weight. Additionally, maladaptive appearance investment significantly moderated the effect of exposure to weight-based derogatory media on women's body satisfaction. However, contrary to expectations, it was women low in maladaptive appearance investment that reported significantly lower body satisfaction in the derogatory media condition compared to the neutral media condition, whereas women high in maladaptive appearance investment did not differ across conditions. This unanticipated finding among women high in maladaptive appearance investment was interpreted as a defensive response against a threat to a valued domain of the self, that is, weight and appearance (Boersma & Jarry, 2013).

Building upon this earlier work, the current study was designed to further investigate the impact of experimental exposure to weight-based derogatory media on body image related variables and implicit anti-fat attitudes. In particular, this research examined prospective predictors of self-selecting weight-based derogatory media, in addition to the impact of self-selected exposure to these media. The final aim of this study was to clarify whether women high in maladaptive appearance investment would respond defensively on measures of body satisfaction and current body size following exposure to derogatory media.

Given the number and complexity of predictions, in conjunction with the high rate of null results, each hypothesis will not be elaborated upon individually (see Table 8 for a summary). Rather, in the interest of clarity, an overarching summary of the pertinent findings is offered below,

followed by a considered interpretation of the pattern of findings, limitations of the current study, and implications and directions for future research.

Summary of Results

Women in the derogatory media condition exhibited significantly greater self-ideal discrepancies, appearance schemas activation, and implicit anti-fat attitudes than did women in the neutral media condition. Contrary to expectations, women's explicit reports of state body satisfaction and fear of negative appearance evaluation did not differ across experimental conditions. Selection of weight-based derogatory media was not significantly predicted by any of the hypothesized body image-related variables, which included body dissatisfaction, fear of negative appearance evaluation, maladaptive appearance investment, and implicit anti-fat attitudes. Similarly, women who viewed weight-based derogatory media after self-selecting them did not differ significantly from women randomly assigned to these media on any of the outcome variables. Further, contrary to predictions, maladaptive appearance investment did not moderate the impact of weight-based derogatory media exposure on any outcome variables (e.g., state body satisfaction, self-ideal discrepancies, current body size, and ideal body size). Finally, exploratory analyses conducted to examine whether implicit anti-fat attitudes significantly increased following exposure to weight-based derogatory media yielded unanticipated results. Specifically, the implicit anti-fat attitudes of women in the derogatory media condition did not change significantly from pre-exposure to post-exposure, whereas implicit anti-fat attitudes among women in the neutral media condition significantly decreased.

Reinforcing Spirals Theory

Synthesizing the process of media selectivity and effects into a single model, Slater's (2007) reinforcing spirals theory proposes that the attitudinal and behavioural consequences of exposure to

specific media promote the subsequent selection of similar media content, strengthening the impact of continued exposure over time. Drawing upon this theory, the same body image-related variables impacted by exposure to weight-based derogatory media were hypothesized to prospectively predict women's selection of weight-based derogatory media (e.g., maladaptive appearance investment, body dissatisfaction, fear of negative appearance evaluation, and implicit anti-fat attitudes). Further, women who viewed weight-based derogatory media after self-selecting them were expected to be more negatively affected than women who were merely assigned to view them. These predictions were entirely unsupported. The absence of any significant predictors or effects for self-selecting weight-derogation media was rather surprising given the growing consensus in the literature that media effects are reciprocal rather than unidirectional in nature (Valkenburg, Peter, & Walther, 2016). Of particular note, Perloff's (2014) recently proposed transactional model of social media and body image concerns draws upon reinforcing spirals theory and other contemporary models of media effects, and predicts that women with individual vulnerability factors (e.g., centrality of appearance to self-worth) should be drawn to engage and spend time with appearance-focused social media content and experience increased body dissatisfaction and negative affect, propelling further engagement with appearance-focused social media in a "mutually reinforcing" spiral of influence that exacerbates deleterious effects.

One plausible explanation for the observed null findings relates to the nature of the media selection task employed in this study. Indeed, relying on a single forced choice selection task as representative of women's overall tendency to engage with weight-based derogatory media is an example of narrow stimulus sampling, which poses significant problems with respect to both construct validity and external validity (Kazdin, 2003). Recall, participants were required to choose between two headlines ("Weighed Down: Frumpy Figures from our Fave Leading Ladies" and

"Celebrities Incognito: What the stars are up to in your backyard!"). Women higher in maladaptive appearance investment, body dissatisfaction, fear of negative appearance evaluation, and implicit anti-fat attitudes were expected to engage with the salient weight-related information presented in the derogatory headline. In contrast, the implicit assumption was that women low in these same variables would not select the weight-based derogatory media, as it would not be personally relevant to them. However, although individuals frequently select salient, attitude consistent information, support for the tendency to avoid dissonant information is much weaker (e.g., Garrett, 2009a, 2009b; Holbert, Garrett, & Gleason, 2010; Johnson, Zhang, & Bichard, 2011). Recently, Jang (2014) conducted two studies to examine selective seeking and selective avoidance as independent phenomena. Participants viewed an online news magazine, created for the study, which displayed 12 news leads featuring four issues. Each issue was addressed by three news articles representing differing views (two opposing views and one neutral view). Unbeknownst to participants, all clicking behaviour and time spent reading the articles was recorded. Results indicated that participants selected attitude consistent news articles significantly more frequently than neutral or inconsistent articles. They also spent more time reading attitude consistent articles. In contrast, participants did not systematically avoid attitude inconsistent information compared to neutral information; both in terms of frequency of article selection and time spent reading the articles. Although Jang (2014) did not investigate motivations driving engagement with attitude inconsistent content, drawing from perspectives on informational utility and exposure behaviours, he noted that understanding alternative viewpoints might be perceived as useful in generating counterarguments (Knobloch-Westerwick & Klienman, 2012). Further, discrepant information may hold utility in permitting users to keep abreast of new information or changes in their environment or social context (e.g., surveillance; Atkin, 1973; Knobloch-Westerwick & Klienman, 2012).

Applying these findings to the current study, given that only two media selection options were present (weight-derogation vs. neutral), rather than systematically avoiding derogatory content, individuals for whom weight-derogation media was not particularly salient or consistent with pre-existing attitudes and beliefs may have been similarly likely to select the neutral or derogatory headlines. Indeed, some participants may have considered it useful to engage with attitude-discrepant weight derogation media for the sake of effectively denouncing it later, out of curiosity, or merely because it was unfamiliar and therefore worth monitoring. Regardless of the motivations, the absence of a selective avoidance effect would serve to reduce prediction of media selection based on proposed vulnerability factors and dampen any moderating effects of self-selected exposure to weight-based derogatory media.

An additional contributing factor to the lack of observed predictors or effects of self-selected exposure to the weight-derogation media relates to contingencies that may lead to homeostasis in the reinforcing spirals model. Specifically, Slater (2015) clarified the model, acknowledging that in its simplest form, as illustrated in his earlier work, the spiraling process is one in which, at *any* point in time, predictive paths can be observed from media exposure to attitudes and behaviours, and from those same attitudes and behaviours to self-selected media exposure. However, he acknowledged that providing this simplified illustration may have been a mistake, and highlighted that a genuine positive feedback loop would result in extremes of media use, attitudes, and behaviour that are typically quite rare (e.g., observed in fundamentalists, zealots, etc.). Instead, he identified that at some point the positive feedback loop of media selectivity and effects will tend towards homeostasis. In an elaborated model, Slater (2015) emphasized the "contingent nature" of the model and expanded on moderating variables that may contribute to homeostasis or escalate the process (Slater, 2015). Of particular relevance to the current study, Slater (2015) specified that, when a particular aspect of an

individual's identity is under threat, selective exposure to attitude and identity-consistent content should increase. In contrast, as threats become less salient, such selective media use and effects should decrease as other identities and interests compete for time and attention.

In the current study, it was hypothesized that it would be difficult for women higher in fear of negative appearance evaluation to disengage from the weight-based derogatory media as this media was expected to be judged as both threatening and relevant. However, the aspects of the derogatory media considered to be threatening (e.g., offering specific details about aspects of appearance that may be criticized) were not present in the derogatory headline itself ("Weighed Down: Frumpy Figures from our Fave Leading Ladies"). Thus, although the headline alludes to specific weight-derogation messages that will follow in the article, in isolation it may have been insufficient to be perceived as threatening. Further, given that the media-selection task in the current study was not preceded by an additional experimentally manipulated body-image threat, individuals with attitudes and beliefs (e.g., maladaptive appearance investment, body dissatisfaction) that may increase the overall salience of, and engagement with, weight-based derogatory media relative to others, may have been at a state of homeostasis at the time of the selection task. That is, at a group level, their existing media use may have been generally in balance with identity threat. As such, there may not have been a need to increase their engagement with these media at the specific moment of the one-time media selection task, leaving them open to explore competing interests in general celebrity news.

Replicating and Extending Past Findings and Clarifying Defensive Responding

Although results yielded no support for reinforcing spirals theory, clear evidence emerged for the negative impact of exposure to weight-based derogatory media. Specifically, as predicted, women in the derogatory media condition exhibited greater self-ideal discrepancies, appearance-

schemas activation, and implicit anti-fat attitudes than did women in the neutral media condition. This is the first research to demonstrate that, similar to viewing pictures and videos of ultrathin models, viewing weight based-derogatory media also activates appearance schemas (Hargreaves & Tiggemann, 2002; Tiggemann et al., 2004). Further, the findings for implicit anti-fat attitudes are both novel and consistent with research demonstrating that implicit anti-fat attitudes are greater upon viewing stereotypical portrayals of obesity (Carels et al., 2013; Hinman, Burmeister, Kiefner, Borushok, & Carels, 2015) and increase in response to messages about the controllability of weight (O'Brien et al., 2010; Teachman et al., 2003). However, contrary to predictions based on the work of Boersma and Jarry (2013), women's reports of fear of negative appearance evaluation and state body satisfaction did not differ across experimental conditions. Similarly, maladaptive appearance investment failed to moderate the effects of exposure to weight-based derogatory media on women's body satisfaction, self-ideal discrepancies, current body size, and ideal body size. Thus, there was no evidence that women high in maladaptive appearance investment were responding more defensively than women low in maladaptive appearance investment when estimating their current body size or responding to written questions about their body satisfaction. Instead, regardless of level of maladaptive appearance investment, a very interesting pattern of findings emerged such that negative effects were only apparent on measures that did not require participants to explicitly endorse appearance-focused concerns.

Taken at face value, women's reports of fear of negative appearance evaluation and state body satisfaction suggest that viewing weight-based derogatory media is not impactful, yet the consistent effects on measures that do not rely on women's explicit agreement with statements about their body evaluation and fears yields an entirely different picture. This disconnect is particularly striking on the two measures of appearance self-appraisal: body satisfaction (as measured with the

BISS) and self-ideal discrepancies (as measured with the BIAS-BD). Recall, self-ideal discrepancies represent the difference between an individual's estimation of their current body size and their view of their ideal body size (as depicted by their selection of corresponding figural drawings), and are used to capture global body dissatisfaction (Menzel et al., 2011). As such, similar predictions were made for both self-ideal discrepancies and the explicit measure of state body satisfaction, yet evidence of greater body dissatisfaction following exposure to the derogatory media was only apparent when women selected visual representations of their current and ideal body size from separate random arrays (e.g., not organized by size), and not when they endorsed written statements of satisfaction. As noted previously, further evidence of the effect of exposure to derogatory media was also apparent on implicit measures of anti-fat attitudes and appearance schemas activation. Thus, it was only on measures in which it was immediately apparent to individuals that they were endorsing appearance-related concerns (e.g., "Right now, at this very moment, I feel extremely dissatisfied with my appearance" and "If I met a new person right now, I would wonder what they thought about my appearance") that no negative effects of exposure to weight-based derogatory media were observed.

What might account for this pattern of findings, which clearly differs from the results of Boersma and Jarry (2013) where women explicitly endorsed greater fear of negative appearance evaluation following derogatory media exposure, and women low in maladaptive appearance investment also reported lower body satisfaction. Notably, in contrast with Boersma and Jarry's (2013) original study, media exposure was preceded by the selection task, with participants choosing between the derogatory and neutral media headlines. Further, in the current study the weight-based derogatory media condition consisted exclusively of derogatory articles, whereas in the previous study women in the derogatory media condition read both derogatory and neutral articles. Being

required to make a choice between denigrating versus neutral media content, in conjunction with the more concentrated dose of derogatory messages, may have primed women's awareness of the broader societal context surrounding thin ideal media messages. Indeed, societal contexts are proposed to influence responses to media messages (Valkenburg & Peter, 2013a). Further, sociocultural pressures appear to be changing, particularly over the past decade, with growing awareness of the body acceptance movement, which is primarily targeted at women and girls (Karazsia, Murnen, & Tylka, 2017).

Feminist perspectives of body image have brought attention to the negative effects of unrealistically thin beauty ideals portrayed in the media for decades now (e.g., McKinley, 2011). There also has been a proliferation of prevention programs aimed at increasing body acceptance and decreasing body dissatisfaction and eating problems, including media literacy interventions designed to cultivate resilience to thin-ideal media messages (e.g., Irving, Dupen, & Berel, 1998; McLean, Paxton, & Wertheim, 2016; Yager & O'Dea, 2008). Additionally, legislative efforts have emerged in some areas. For example, France recently banned underweight models (BMI < 18) from runways, following similar actions taken in Israel, Milan, and Madrid (Record & Austin, 2016; Stampler, 2015). Finally, of particular note, in recent year's mass media campaigns (e.g., Dove's 'Real Beauty' and 'Choose Beautiful' campaigns) have targeted women to reduce dissatisfaction and increase acceptance of their bodies (Bissell & Rask, 2010; Persis Murray, 2013; Unilever, 2017).

Such sociocultural changes have been put forth as a possible explanation for observed decreases in women's and girls' explicit reports of body dissatisfaction between 1981 and 2012 (Karazsia et al., 2013). Specifically, Karazsia and colleagues (2017) conducted cross-temporal meta-analyses with data from 326 different nonclinical samples (n = 100,228) to investigate changes in both muscularity-oriented dissatisfaction and thinness-oriented dissatisfaction, which was assessed

with the Eating Disorder Inventory – Body Dissatisfaction subscale. Although muscularity-oriented dissatisfaction remained constant across time, over the 31-year time span girls' and women's scores for thinness-oriented dissatisfaction gradually decreased. Additionally, scores did not vary based on geographic region or level of human development within the countries. The researchers highlighted that the changes in body dissatisfaction may reflect gradual shifts in sociocultural ideals towards body acceptance. Yet, although body dissatisfaction plays a central role in the development and maintenance of eating disorders (e.g., Stice, 2001) incidence rates for most eating disorders have remained stable (e.g., Crowther, Armey, Luce, Dalton, & Leahey, 2008; Keel & Klump, 2003; Smink, van Hoeken, & Hoek, 2012). Additionally, incidence rates for anorexia nervosa in girls between 15 and 19 years old are increasing (Smink et al., 2012). Thus, there appears to be a disconnect between women's declared decreases in body dissatisfaction and the rates of eating disorders in the same population.

Karazsia and colleagues (2017) did acknowledge that although they hope sociocultural shifts in the form of increased messages of body acceptance are reducing pressures towards attaining a thin-ideal body, they may be insufficient to account for observed decreases in body dissatisfaction. Indeed, although modeling agencies are representing women with a more diverse range of weights and shape, larger women are rarely hired by the fashion industry and ultra-thin models continue to dominate runways and ad-campaigns (Czerniawski, 2015). For example, in a study of 85 professional female models working at New York Fashion Week in 2016, 81% were underweight (BMI < 18.5), the mean BMI was 17.5, and less than 5% had a BMI over 20 (Rodgers, Ziff, Lowy, Yu, & Austin, 2017). The models also reported high levels of industry pressure to lose weight, which was associated with greater use of unhealthy weight control behaviours (Rodgers et al., 2017). Additionally, women's bodies continue to be scrutinized in traditional mass media outlets, and blogs

and other online forums allow readers to join in judging other women's appearance (Chrisler, 2012). Further, not only are overweight and obese women more likely than men to experience negative consequences of weight-discrimination across multiple domains (e.g., employment, salary, educational attainment, romantic relationships), the range of acceptable body weight remains much narrower for women than for men (Fikkan & Rothblum, 2012). Judge and Cable (2012), using a sample from the U.S., found that women experience a wage penalty when they move from the thin category into the average size category. Thus, the developing body acceptance movement exists against the backdrop of continued widespread gendered weight-based discrimination and bombardment with depictions of thin models.

As an alternative explanation for decreases in body dissatisfaction, Karazsia et al. (2017) identified that perhaps the nature of sociocultural pressures is changing (e.g., towards a towards a "sexualized curvaceous" and/or "strong, lean, and fit" ideal). However, it is also plausible that societal messages about body acceptance, particularly those conveyed in mass media campaigns, may have introduced a prescriptive norm to outwardly exhibit body satisfaction and appear to disregard thin-ideal media messages, leading women to become more secretive about expressing appearance concerns (Chang, 2014a).

Indeed, there is evidence that women may not accurately disclose their body dissatisfaction on self-report questionnaires under various circumstances. Concerns about the influence of secrecy and impression management have driven recent efforts to develop implicit measures of body image (e.g., Heider, Spruyt, & De Houwer, 2015). Further, research has demonstrated evidence of secrecy in explicit reports of body dissatisfaction and disordered eating behaviours in a nonclinical sample. Chang (2014a) had undergraduate women complete measures online, and then examined how their responding changed when they completed the same questionnaires again in the lab under the

assumption that their responses would either remain private or be publicly discussed with peers. Overall, participants who believed that their responses would be shared publicly exhibited greater decreases in their reports of body dissatisfaction and disordered eating, and exhibited greater appearance and weight satisfaction in the lab compared to online. Chang (2014a) noted that these results were consistent with findings from the fat talk literature that women perceive expressing body dissatisfaction as annoying (Salk & Engeln-Maddox, 2011) and judge positive comments about body image as more likeable than fat talk (Tompkins, Martz, Rocheleau, & Bazzini, 2009). Additionally, in focus groups of feminist women who reported that feminist perspectives helped them to celebrate bodily diversity and resist cultural pressures, such strategies were deemed insufficient to fully protect against deeply engrained beauty ideals (Rubin, Nemeroff, & Russo, 2004). In particular, the women indicated beliefs that they should accept their bodies and reject the thin ideal, yet felt guilty for continuing to struggle with conforming to beauty ideals and being critical of their own appearance (Rubin et al., 2004). Considered together, these findings support the idea that nonclinical women experience pressure to hide or minimize expressions of body dissatisfaction and to conform to an emerging norm of being content with one's appearance.

Linking these findings with messages put forth through large scale mass media campaigns, Dove's 'Real Beauty' media campaign, which has been heralded as promoting body acceptance, has also been criticized for usurping feminist perspectives, positioning the brand as the site for challenging beauty standards while paradoxically "[…] dictating a beauty ideology that encompasses appearance and behaviour" (Johnson & Taylor, 2008; Persis Murray, 2013). Specifically, Persis Murray (2013) argues that the "Real Beauty" campaign enlists girls and women to perform "self-esteem behaviours" to pursue "real beauty" in the name of empowerment, and serves to place the responsibility for women's and girls' lack of self-esteem on themselves. In line with these criticisms,

Dove's most recent "Choose Beautiful" campaign, released in 2015, acknowledges women's widespread appearance anxiety, but instructs women to choose to feel beautiful rather than waiting for a "trend, or magazine, or person to come along and give us permission" (Unilever, 2017). Instead, feeling beautiful is positioned as, "a choice just like any other you make about yourself, a personal power we all have the right to embrace" (Unilever, 2017). In the video associated with this campaign, women are presented with the option to walk through doors that are labeled either "Average" or "Beautiful" and then discuss their choice, with many individuals who walked through the "Average" door questioning their decision and/ or vowing to "Choose Beautiful" in the future (Unilever, 2017). Such messages exert pressure on women to display satisfaction with their appearance, and position any neutral or negative appearance self-evaluations as disempowered "choices".

In the present study, priming or activation of emerging societal pressures to exhibit body satisfaction and appear unaffected by thin-ideal media content could account for the disconnect between the null findings on explicit self-reports of appearance concerns and greater self-ideal discrepancies, implicit anti-fat attitudes, and appearance schemas activation following exposure to weight-based derogatory media. Specifically, women in the weight-based derogatory media condition may have defensively under-reported concerns on explicit self-report measures, whereas the actual negative impact of exposure to these media was captured by the implicit measures and figural rating scales. Further, although in Boersma and Jarry's (2013) study only women high in maladaptive appearance investment were interpreted as responding defensively to questions about body satisfaction in order to protect a valued domain of the self, in the current study, activation of prescriptive norms to display satisfaction with one's appearance may have led to more widespread defensive responding. Indeed, in the intervening period between data collection for these two

studies, societal pressures have continued to evolve at quick pace with the ongoing emergence of new body acceptance media campaigns (e.g., Dove's 2015 "Choose Beauty" campaign was released partway through data collection). The new cohort of undergraduate participants in this study also would have been exposed to such messages even earlier in their development (e.g., 1st year undergraduates in the study would have been approximately 11 years old when Dove's "Real Beauty" campaign first came out). Further, requiring participants to make a media choice, in combination with the more targeted dose of derogatory content in the current study, may have heightened awareness of these rapidly developing pressures, resulting in more pervasive defensiveness on explicit evaluations of body satisfaction and fear of negative appearance evaluation than what was observed in Boersma and Jarry's (2013) initial study.

To clarify, however, among women high in maladaptive appearance investment, defensive responding may be attributable to a combination of efforts to preserve self-esteem in a valued area of the self, as well as awareness of emerging societal pressures to exhibit body satisfaction. Although the respective triggers or motivations for defensive responding among women high and low in maladaptive appearance investment cannot be easily teased apart as the outcome is the same, responding to a threat by bolstering or preserving self-esteem in a valued domain has emerged in other research. For example, in an experimental study, O'Driscoll and Jarry (2015) found that after being exposed to an interpersonal rejection, undergraduate women whose self-worth was more contingent on body weight responded by reporting greater appearance self-esteem and body satisfaction, whereas social and performance domains of self-esteem were unaffected. The researchers interpreted these paradoxical findings as a defensive compensatory response to a self-esteem threat within a self-important domain (O'Driscoll & Jarry, 2015). Similarly, Jarry and Kossert (2007) found that after viewing thin ideal images, women who had received failure feedback

on a purported intellectual assessment reported lower investment and greater satisfaction with their appearance than women who were provided with success feedback, though no moderating variables were investigated.

Supplementary Analyses

Post-hoc analyses were performed to investigate whether implicit anti-fat attitudes significantly increased following exposure to weight-based derogatory media. As noted previously, participants exposed to the derogatory media content exhibited significantly greater implicit anti-fat attitudes compared to women in the neutral media condition. However, unexpectedly, implicit anti-fat attitudes among women in the weight-based derogatory media condition did not significantly differ from pre- to post-exposure, and there was a trend towards lower implicit anti-fat attitudes after viewing these media. Instead, implicit anti-fat attitudes significantly declined from pre-to post-exposure among women in the neutral media condition. Although these results run counter to expectations, methodological considerations appear to be the most likely contributors to this within-subjects decline in implicit anti-fat attitudes.

Firstly, effect magnitudes tend to diminish following repeated administrations of the implicit association test (IAT; Greenwald et al., 2003; Nosek, Greenwald, & Banaji, 2007). Although the *D* scoring algorithm employed in the current study serves to reduce the influence of this factor, Greenwald et al. (2007) advise that in studies with more than one administration of the IAT (either in a single testing session or across different sessions) experience with the IAT must not be ignored. Rather, the inclusion of a control IAT that is not expected to be influenced by the manipulation or intervention is recommended for comparison purposes (Nosek et al., 2007; Teachman & Woody, 2003). Given that in the current study, repeated measures analyses were not a part of the original plan for data analysis, no such comparison IAT was included. Consequently, although it is quite

plausible that experience with the IAT contributed to reductions in implicit anti-fat attitudes to some degree, the magnitude of this influence cannot be ascertained.

A further methodological concern is that the initial administration of the anti-fat attitudes IAT was completed online, whereas the post media exposure IAT was completed in the lab. Although there is certainly evidence that the IAT can be validly administered online (e.g., Houben & Wiers, 2008), the IAT is susceptible to situational effects (Schmukle & Egloff, 2005). Schmukle and Egloff (2005) used latent state-trait analysis (LST) to investigate the effect of the situation in which the assessment occurs on both implicit (IAT) and explicit (self-report) measures of trait anxiety and extraversion. LST analysis allows for the observed variance of a measure to be parsed out into trait-specific and occasion-specific parts by administering the same tests to participants on different occasions (Schmukle & Egloff, 2005). On each of two measurement occasions, all tests were completed in the laboratory in a fixed order, with implicit tests preceding explicit measures. The researchers found that, for both the explicit and implicit measures, most of the reliable variance captured stable interindividual differences. However, even in the absence of any systematic variation in administration procedure, they found significant occasion-specific effects for both IATs. Further, the implicit measures were somewhat more affected by the measurement situation than the explicit measures, as evidenced by greater occasion-specificity (Schmukle & Egloff, 2005). The researchers noted that similar effects were observed for an IAT evaluating attitudes towards gay men (Steffens & Buchner, 2003). Additionally, these findings are consistent with prior research demonstrating that, regardless of which construct is being measured, IATs have good internal consistency but only moderate stability (e.g., Cunningham, Preacher, & Banaji, 2001; Schmukle & Egloff, 2004).

In light of the aforementioned findings that the IAT is less stable and more susceptible to situation-specific effects than explicit self-reports, in the current study systematic variation in the

assessment context (online vs. in lab) may have had a significant impact on the results for implicit anti-fat attitudes. Notably, research conducted within the same research lab at the University of Windsor yields evidence of significant declines in explicit measures of both body dissatisfaction and disordered eating variables when measured in lab compared to online (Chang, 2014b). Specifically, in follow-up analyses to her investigation of secrecy of body dissatisfaction, disordered eating, and body checking in nonclinical women, Chang (2014b) examined differences in online versus in lab reports among women in the control condition, who were explicitly instructed that the questionnaires they filled out again in the lab would be kept private. Paired sample *t* tests revealed that although none of the measured variables significantly increased, drive for thinness, shape concerns, eating concerns, and bulimic symptoms were all significantly lower when measured again in lab compared to online (*p*s < .05). In the present study, although none of the explicit self-report questionnaires administered pre- and post- media exposure were completely identical, fear of negative appearance evaluation was assessed both online and in the laboratory. However, for the laboratory administration the instructions and the wording of two items were adjusted slightly to gather state rather than trait information (e.g., "When I meet new people, I wonder what they think about my appearance" was changed to "If I met a new person right now, I would wonder what they thought about my appearance"). While comparisons of the findings for the trait and state versions of fear of negative appearance evaluation are necessarily limited in their utility, it is still interesting to note that paired sample *t* tests for women in both the derogatory and neutral media conditions revealed significantly lower fear of negative appearance evaluation when measured in the lab compared to online (*p*s < .001).

Considered together, it is reasonable to assume that the combination of experience with the IAT and situation-specific effects of the assessment context (online vs. in lab) may have been

responsible for the within-subjects reductions in implicit anti-fat attitudes from Time 1 to Time 2. However, exposure to weight-based derogatory media significantly mitigated these effects such that measurement-related decreases in implicit anti-fat attitudes were only significant among women who viewed the neutral media. As such, between-subjects analyses revealed that women exhibited significantly greater implicit anti-fat attitudes following exposure to the weight derogation media.

It is important to highlight that the methodological concerns outlined above are specific to within-subjects comparisons across repeated administrations of the IAT and have no bearing upon the foregoing interpretation of significant between-subjects differences in implicit anti-fat attitudes following media exposure. Specifically, all participants had the same prior experience with the IAT after completing it online, and all participants completed the IAT in the same setting (in lab). Yet, despite equivalent measurement conditions at Time 2, women in the weight derogation condition displayed greater implicit anti-fat attitudes than women in the neutral media condition. Thus, consistent with the findings for appearance schemas activation and self-ideal discrepancies, implicit anti-fat attitudes clearly differed as a function of media exposure, with more negative outcomes apparent in the derogatory media condition.

Limitations of the Current Research

As noted previously, a primary limitation of the present study is the dichotomous nature of the forced choice media selection task, which is reflective of narrow stimulus sampling (Kazdin, 2003). Including a selection task within this study is certainly in line with contemporary theories on the transactional nature of media selectivity and effects (e.g., Valkenburg et al., 2016). However, offering only two options (derogatory vs. neutral) may have impeded prediction of selecting the weight-based derogatory media given recent research indicating that individuals do not exhibit avoidance of media that is inconsistent with predisposing attitudes and beliefs, engaging with it at the

same frequency as media that is neutral with respect to their existing views (Jang, 2014). As such, creation of an alternative selection task including a greater number of headlines for participants to choose from may have improved prediction, though this would necessitate a substantial increase in sample size to achieve adequate power for statistical analyses.

A further limitation of the media selection task used in the current study is that it was not preceded by a body image threat. In light of Slater's (2015) clarification that in the absence of threat the reinforcing spirals of media selectivity and effects may move towards homeostasis, preceding the media selection task with a body image threat could increase the likelihood that women for whom weight-based derogatory media is salient and consistent with existing attitudes and beliefs would exhibit selectivity effects at the specific time of measurement, rather than engaging with competing interests (e.g., general celebrity news). However, any experimental approach to investigating selective exposure has unavoidable drawbacks in terms of external validity given that media selection is operationalized as a choice (or series of choices) between a limited number of presented options, whereas actual online media engagement is a lengthy series of active decisions between an almost endless series of alternatives, incorporating both habitual routines (e.g., visiting bookmarked sites) and novel behaviours (e.g., unique searches) (Dvir-Gvirsman, Tsfati, & Menchen-Trevino, 2016; Prior, 2013). Consequently, behavioural data obtained from collecting participants' complete web-browsing history over a specific time period can offer greater insight into selective media exposure as it naturally unfolds (e.g., Dvir-Gvirsman, Tsfati, & Menchen-Trevino, 2016).

Also outlined above, although the present study was not designed with the intention of examining changes in implicit anti-fat attitudes from pre- to post-media exposure, the absence of a control IAT in conjunction with systematic variations in the assessment context are clear methodological limitations that impede proper examination of changes in implicit attitudes over time.

In the present research, given that repeated measures analyses were not planned, online administration of measures at Time 1 was chosen to facilitate ease of data collection and reduce demand characteristics by maintaining the plausibility of the cover story that the online and laboratory components were separate studies. However, future research aimed at investigating changes in implicit attitudes in response to any manipulation or intervention should maintain consistency in the assessment context and include a control IAT (e.g., Nosek et al., 2007; Schmukle & Egloff, 2005; Teachman & Woody, 2003).

A further limitation of the current study is the composition of the sample. Although the sample was relatively diverse in terms of ethnic background, all participants were enrolled in psychology courses and more than 1/3 were in their third year or above of undergraduate studies. Use of this specific and highly educated sample, which is likely to be more aware of psychological constructs than the general population, limits generalizability. As such, finding should be replicated with more diverse samples (e.g., age, level of educational achievement etc.).

Finally, it is important to note that the data collection period for the current research was rather protracted, occurring over the course of 20 months. During this period, societal messages about body image and displaying satisfaction with one's appearance continued to evolve. For example, the Dove "Choose Beautiful' campaign was released partway through the data collection period in spring 2015 (Unilever, 2017). As such, women who completed the study earlier in this period may have responded differently than those who participated towards the end of data collection. Additionally, the lengthy data collection period increases the risk that participants may have shared information about the study, thereby contaminating the cover story. During debriefing, women were asked not to discuss the study, "at least until the end of the school year." At the time that the debriefing materials were written this timeframe was considered reasonable, but that phrase

was not flagged and removed when data collection was extended due to sluggish sign-up rates for laboratory studies. Consequently, although some participants may not have abided by this promise at all, others may have shared information about the study at the end of the academic year, when they believed this was acceptable. A recent change in participant pool policies that incentivizes in-lab research by granting additional course credit to students may help to reduce data collection periods and the associated limitations for current and future laboratory research conducted at the University of Windsor (Fritz, Sisic, Freund, O'Driscoll, & Glasgow, 2016).

Implications and Directions for Future Research

Consistent with the recommendations of Boersma and Jarry (2013) the results of the present study offer further support for expanding the definition of thin-ideal media to include weight-based derogatory media. Indeed, similar to exposure to thin-ideal media messages, viewing weight-based derogatory media was associated with greater self-ideal discrepancies and appearance schemas activation. Further, inclusion of weight derogation media as a subset of thin-ideal media is consistent with literature encouraging feminist scholars to expand their focus on pressures faced by women to be thin to attend to the disparate impact women face in terms of weight stigmatization and discrimination (Chrisler, 2012; Fikkan & Rothblum, 2012). Indeed, such scholarship highlights that the thin ideal underlies the greater judgment or punishment women face for violating these societal standards (Chrisler, 2012; Fikkan & Rothblum, 2012).

In this vein, further research is needed to explore various forms of weight-based derogatory media, including messages that criticize women who are overweight or obese, and examples of weight derogation in television and movies (Boersma, 2011). Additionally, in light of evidence that young women are increasingly shifting their media use away from conventional sources, such as television and magazines, towards social media (e.g., Duggan & Brenner, 2013; Lenhart, Purcell,

Smith, & Zickuhr, 2010; Perloff, 2014), investigation of the impacts of weight-based derogatory messages conveyed via these outlets will become increasingly relevant. Given that social media sites differ in many respects and are populated by a highly diverse range of users (e.g., individuals known to users in real-life, anonymous peers, widely recognized celebrities, individuals who have gained notoriety on a particular social media outlet, etc.), variables including the identity of the commenter relative to the user and the response of other users in the community may significantly influence the effects of such messages on young women. Future research could also explore the effects of exposure to media messages that denigrate men for gaining weight on men's body image and anti-fat attitudes.

Although the current results did not yield any support for Slater's (2007, 2015) reinforcing spirals theory, possibly due to previously identified limitations with the media selection task, future research investigating relationships between thin-ideal media and body image will benefit from drawing upon contemporary theoretical perspectives that emphasize the complex and reciprocal relationships between media selectivity and effects in order to formulate careful hypotheses that allow for the identification of susceptible individuals and boundary conditions for media effects (Perloff, 2014; Valkenburg & Peter, 2013b). Additionally, in light of the null findings on explicit self-report measures of appearance-focused concerns in the current study, incorporation of more implicit and behavioural measures into future research will likely be particularly important in order to capture effects that individuals may not be willing or able to explicitly endorse. For example, Heider and colleagues (2015) recently developed an implicit measure of body dissatisfaction using two Implicit Relational Assessment Procedures assessing women's actual and ideal body image. Further, given that implicit anti-fat attitudes significantly predict weight discrimination (Agerström & Rooth, 2011; Bessenoff & Sherman, 2000), it would be particularly meaningful to examine

whether exposure to weight-derogation media induces greater discriminatory behaviour towards overweight and/or obese persons. This could be assessed through examining the distance participants choose to sit from an overweight/obese confederate following exposure, or rankings of obese versus average weight job applicants (Agerström & Rooth, 2011; Bessenoff & Sherman, 2000).

Another direction for future research, related to evidence of secrecy in nonclinical women's reports of body dissatisfaction and disordered eating behaviours (e.g., Chang, 2014), would be to investigate whether mass media campaigns that purportedly promote body acceptance are instead contributing to new sociocultural pressures to exhibit outward body satisfaction in the name of empowerment while going underground with genuine experiences of dissatisfaction. Qualitative approaches, similar to the focus groups conducted by Rubin et al. (2004), may be particularly helpful in eliciting open discussion of women's experiences of pressures surrounding the expression of body image self-appraisals and how these may vary by context (e.g., displaying public satisfaction, particularly on social media platforms, yet engaging in fat talk with close friends and participating in unhealthy weight control behaviours). Further, experimental investigations could examine the impact of exposure to widespread media messages, such as Dove's "Choose Beautiful" campaign, on both implicit and explicit measures of body image variables. Additionally, in light of findings that suggest women's ideal body size becomes heavier in accordance with peers' heavier preferences, developing and examining the effectiveness of media campaigns that challenge women's perceptions of what others consider attractive may be particularly fruitful as an alternative to messages encouraging women to disregard thin-ideal beauty norms (Bair, Steele, & Mills, 2014).

In terms of intervention and prevention strategies related to weight-based derogatory media in particular, although further research is still required surrounding the impact of various types of

weight-derogation media on body image and anti-fat attitudes, findings from the present research, in combination with the findings of Boersma and Jarry (2013) suggest deleterious effects of short-term exposure. As further research evidence is accumulated, policy changes to reduce exposure to weight stigmatizing content in traditional and social media outlets should be considered. However, prior to implementation, strategic investigation of questions relevant to policy makers, including projected impacts of competing approaches and public support for policies should be undertaken (Brownell & Roberto, 2016). For example, seemingly straightforward solutions such as banning search terms associated with deleterious thin-ideal messages on social media can yield unintended consequences (Chancellor, Pater, Clear, Gilbert, & De Choudhury, 2016). Chancellor and colleagues (2016) found that Instagram's ban of searches on several pro-eating disorder tags (e.g., 'thighgap' and 'thinspiration') led to the emergence of lexical variants (e.g., 'thinspo', 'thyghgapp') to circumvent the restrictions. Instagram communities that used these lexical variants exhibited increased participation and support of pro-eating disorder content, and the tags linked with these lexical variants expressed more "triggering" and self-harm promoting content (e.g., 'deadinside', 'selfharmmm'). Given these findings, Chancellor et al. (2016) concluded that Instagram-enforced moderation was ineffective and linked to negative consequences. As an alternative to banning tags, the researchers suggested more nuanced strategies such as modifying the recommendation logarithms used by the media platform in order to introduce recovery-related content to individuals utilizing such tags (Chancellor et al., 2016). These findings speak to the challenges of introducing changes to effectively reduce exposure to harmful thin-ideal media content, and the need for strategic research to drive implementation and evaluation of such policy changes.

More proximally, researchers and clinicians should consider specifically addressing weight-based derogation, conveyed both through the media and interpersonally, in prevention programs

aimed at improving body image and resiliency to thin-ideal messages (Boersma, 2011). Indeed, failure to effectively address weight-derogation messages in such programs may undermine their effectiveness. For example, Rauscher, Kauer, and Wilson (2013) completed a mixed methods program evaluation of "Girls On the Run of Los Angeles County," a 12-week sports-based program designed to bolster preadolescent girls' strengths, with a focus on self-esteem and body image. Paradoxically, they found that although girls reported higher body esteem and lower levels of objectified body consciousness following participation, when describing key characteristics of strong healthy bodies many girls reiterated the importance of maintaining a thin body and not being fat (Rauscher et al., 2013). Drawing from ethnographic data, the researchers argued that fat-stigmatizing messages permeated the program in subtle yet powerful ways, solidifying cultural messages about thinness despite the clearly defined intentions of the program to challenge these ideals. These findings underscore the importance of continued efforts to understand and mitigate the effects of weight derogation messages.

Conclusion

The current research experimentally investigated the impact of exposure to weight-based derogatory media on women's body image and implicit anti-fat attitudes. Drawing upon reinforcing spirals theory (Slater, 2007), this study was designed to examine predictors of choosing to engage with weight-based derogatory media, as well as the impact of self-selected exposure to these media. A further goal was to clarify whether women high in maladaptive appearance investment would respond defensively on explicit measures of body satisfaction and current body size after viewing weight derogation media. Results indicated that exposure to weight-based derogatory media resulted in greater self-ideal discrepancies, appearance schemas activation, and implicit anti-fat attitudes than exposure to neutral media. However, explicit reports of body satisfaction and fear of negative

appearance evaluation did not differ across conditions. Findings yielded no support for reinforcing spirals theory, possibly due to limitations associated with the dichotomous forced choice media selection task that was employed. The selection of weight-based derogatory media was not significantly predicted by any of the study variables, nor were there any effects of selection on the impact of media exposure. Further, there was no evidence that women high in maladaptive appearance investment responded more defensively than women low in maladaptive appearance investment on measures of body satisfaction and current body size. Rather, regardless of level of maladaptive appearance investment, there was a clear disconnect in women's responding such that negative effects of exposure to weight-based derogatory media only emerged on measures that did not require participants to explicitly endorse appearance-focused concerns. This pattern of findings was interpreted as resulting from the activation of rapidly emerging societal pressures to display satisfaction with one's appearance leading to more widespread defensive responding on explicit measures of body satisfaction and fear of negative appearance evaluation, whereas the actual negative impact of exposure to weight-derogation media was captured by the implicit measures of anti-fat attitudes and appearance schemas activation, and figural rating scales assessing self-ideal discrepancies.

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APPENDICES

Appendix A – Screener Questions for Participant Pool Recruitment

Have you ever participated in a study about body image at the University of Windsor? Y/N

Have you ever been diagnosed with an eating disorder? Y/N

How would you best describe your gender? Female, Male, Transgender, Other

Appendix B - Pilot Study Participant Pool Recruitment Advertisement

Title: The Relationship Between Reaction Time, Individual Differences, and Preferences for Publication Type
Researchers: Katelyn Boersma, Dr. Josée Jarry
Duration: Study 1: 30 minutes
Credits: 0.5 credits

Description:

The purpose of this study is to examine the relationship between reaction time, individual difference variables, and preferences for publication type among university students. This study is completed in an on-line format and your responses will be kept completely confidential. You will be asked to complete a 5-minute reaction time task, a series of brief questionnaires related to mood and personality, and to engage in publication preferences selection task. This study will take approximately 30 minutes to complete and will be done in one session. Once you sign up for the study you will be contacted by the researcher via e-mail to gain access to the study.

Appendix C - Weight Implicit Associations Test (W-IAT)

The IAT requires participants to categorize negatively or positively valenced words and images of obese and thin silhouettes. Participants categorize the negatively valenced words into "bad" and the positively valenced words into "good" by pressing specific keys. Participants also categorize the obese images as "fat" and the thin images as "thin" by pressing specific keys. Reaction times for categorization of the stimuli are measured. Table 1 provides the standard schematic overview of the W-IAT (Lane, Banaji, Nosek, & Greenwald, 2007). Table 2 presents the counterbalanced schematic (Greenwald, Nosek, & Banaji, 2003; Nosek, Greenwald, & Banaji, 2005). The stages listed in bold represent test trials. Non-bolded stages are practice trials.

Table 1
Schematic Overview of W-IAT.

Block	Number of Trials	Left Key Assignment	Right Key Assignment
1	20	Thin	Fat
2	20	Good	Bad
3	20	Thin Good	Fat Bad
4	**40**	**Thin** **Good**	**Fat** **Bad**
5	40	Fat	Thin
6	20	Fat Good	Thin Bad
7	**40**	**Fat** **Good**	**Thin** **Bad**

Note. For 50% of participants, the positions of Stages 1, 3, and 4 are switched with those of Blocks 5, 6, and 7 (see Table 2 below).

Table 2
Counterbalanced Schematic Overview of W-IAT.

Block	Number of Trials	Left Key Assignment	Right Key Assignment
1	20	Fat	Thin
2	20	Good	Bad
3	20	Fat Good	Thin Bad
4	**40**	**Fat** **Good**	**Thin** **Bad**
5	40	Thin	Fat
6	20	Thin Good	Fat Bad
7	**40**	**Thin** **Good**	**Fat** **Bad**

General Instructions:
In this task, you will be presented with a set of words or images to classify into groups. This task requires that you classify items as quickly as you can while making as few mistakes as possible. Going too slow or making too many mistakes will result in an un-interpretable score. This part of the study will take about 5 minutes. The following is a list of category labels and the items that belong to each of those categories.

Category	Items
Bad	Terrible, Horrible, Awful, Hurt, Evil, Lazy, Stupid, Undisciplined, Insecure, Hostile
Good	Joy, Love, Peace, Wonderful, Laughter, Motivated, Intelligent, Disciplined, Confident, Friendly
Fat	Images of fat people
Thin	Images of thin people

Keep in mind

- Keep your index fingers on the 'e' and 'i' keys to enable rapid response.
- Two labels at the top will tell you which words or images go with each key.
- Each word or image has a correct classification. Most of these are easy.
- Please try to go as fast as possible.
- Expect to make a few mistakes because of going fast. That's OK.
- For best results, avoid distractions and stay focused.

I am ready to begin

Stage 1:
Put your middle or index fingers on the E and I keys of your keyboard. Words or images representing the categories at the top of the screen will appear one-by-one in the middle of the screen. When the item belongs to a category on the left, press the E key; when the item belongs to a category on the right, press the I key. Items belong to only one category. If you make an error, an X will appear – fix the error by hitting the other key.
This is a timed task. GO AS FAST AS YOU CAN while making as few mistakes as possible.
Press the space bar to begin.

Stage 2:
See above, the categories have changed. The items for sorting have changed as well. The rules, however, are the same.
When the items belong to a category on the left, press the E key; when the item belongs to a category on the right, press the I key. Items belong to only one category. An X appears after an error – fix the error by hitting the other key. GO AS FAST AS YOU CAN.
Press the space bar to begin.

Stage 3:
See above, the four categories you saw separately now appear together. Remember, each item belongs to only one group. For example, if the categories **thin** and **good** appeared on separate sides of the screen, pictures of thin people would go in the **thin** category, not the **good** category.
The green and white labels and items may help to identify the appropriate category. Use the E and I keys to categorize items into the four groups left and right, and correct errors by hitting the other key.
Press the space bar to begin.

Stage 4:
Sort the same four categories again. Remember to go as fast as you can while making as few mistakes as possible. Remember, each item belongs to only one group.
The green and white labels and items may help to identify the appropriate category. Use the E and I keys to categorize items into the four groups left and right, and correct errors by hitting the other key.
Press the space bar to begin.

Stage 5:
Notice above, there are only two categories and they have switched positions. The concept that was previously on the left is now on the right, and the concept that was on the right is now on the left. Remember, items belong to only one category. Practice this new configuration.
When the item belongs to a category on the left, press the E key; when the item belongs to a category on the right, press the I key. If you make an error, an X will appear – fix the error by hitting the other key.
This is a timed task. GO AS FAST AS YOU CAN while making as few mistakes as possible.
Press the space bar to begin.

Stage 6:
See above, the four categories now appear together in a new configuration. Remember, each item belongs to only one group.
The green and white labels and items may help to identify the appropriate category. Use the E and I keys to categorize items into the four groups left and right, and correct errors by hitting the other key.
Press the space bar to begin.

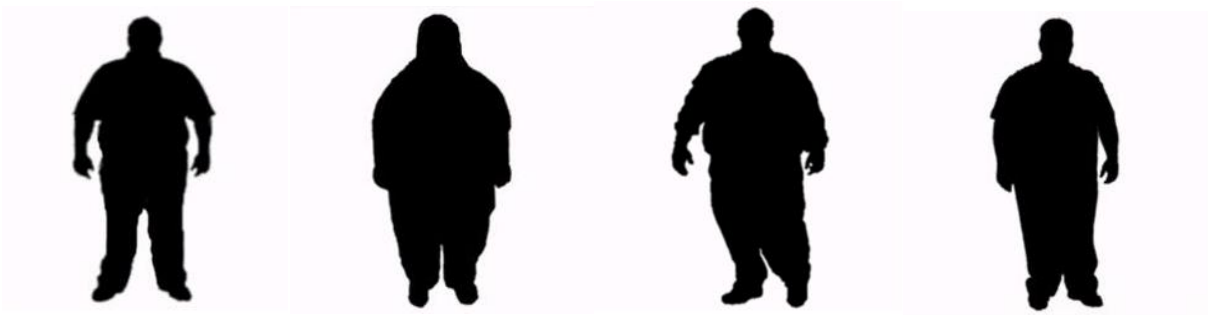
Stage 7:
Sort the same four categories again. Remember to go as fast as you can while making as few mistakes as possible. Remember, each item belongs to only one group.
The green and white labels and items may help to identify the appropriate category. Use the E and I keys to categorize items into the four groups left and right, and correct errors by hitting the other key.
Press the space bar to begin.

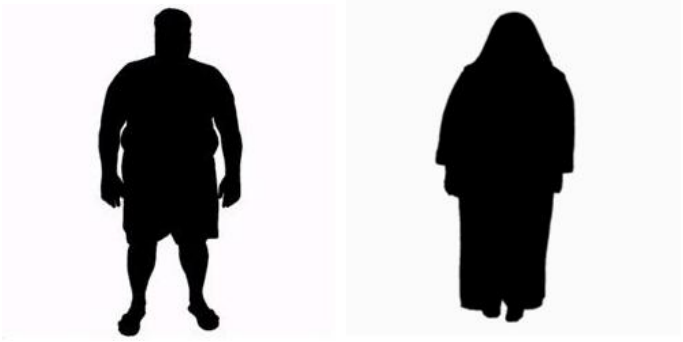
Word stimuli:

Negatively Valenced Words	**Positively Valenced Words**
Terrible	Joy
Horrible	Love
Awful	Peace
Hurt	Wonderful
Evil	Laughter

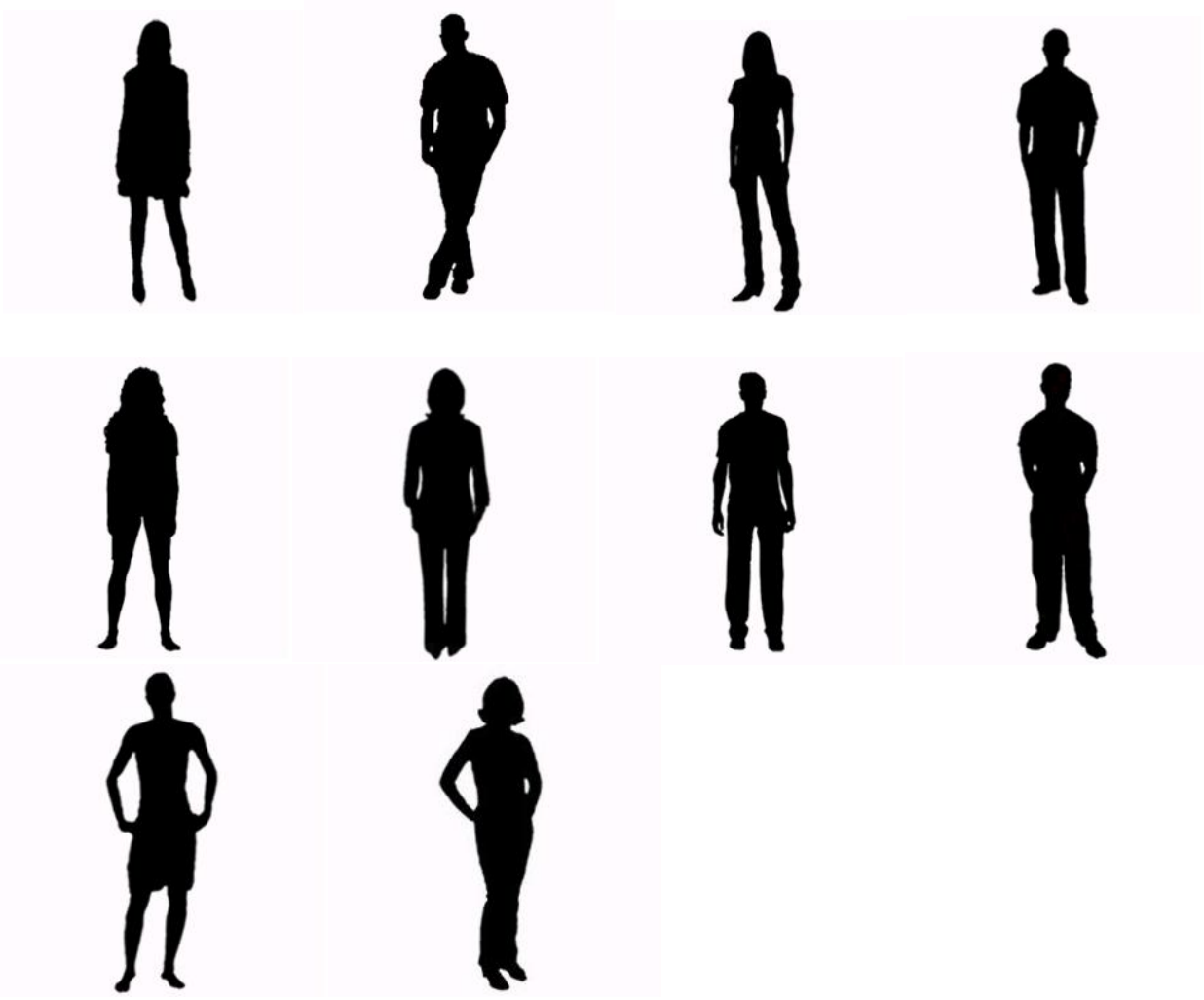
Lazy	Motivated
Stupid	Intelligent
Undisciplined	Disciplined
Insecure	Confident
Hostile	Friendly

Obese images:





Thin images:



Appendix D - Demographics Questionnaire

Age: _____ Gender: _____

Height: _____ Weight: _____ (lbs/ kg)

Relationship Status:

Single ☐ In a relationship/cohabiting ☐ Married/common law ☐

Divorced/separated ☐ Widowed ☐

What is your ethnic background?

Aboriginal	☐	South Asian	☐	Arab or West Asian	☐
African	☐	European	☐	Caribbean	☐
East Asian	☐	South or Central American	☐		

Other (please specify):_____

School enrolment: Full time student ☐ Part time student ☐

Years in University:

First year	☐	Third year	☐	More than 4 years	☐
Second year	☐	Fourth year	☐		

Including your current psychology course, how many psychology courses have you taken so far? _____

What is/are your university major(s)? _____

What is/are your university minor(s)? _____

Appendix E - Informed Consent Form: Online Pilot Study

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: **The Relationship Between Reaction Time, Individual Differences, and Preferences for Publication Type**

You are asked to participate in a research study conducted by Katelyn Boersma, supervised by Dr. Josée Jarry, from the Department of Psychology at the University of Windsor. The results of this study will be used to fulfil the requirements of a Doctoral dissertation.

If you have any questions or concerns about the research, please feel to contact the primary investigator, Katelyn Boersma at boersmak@uwindsor.ca, or the faculty supervisor, Dr.Josée Jarry at (519) 253-3000, extension 2237.

PURPOSE OF THE STUDY

The purpose of this study is to examine the relationship between individual difference variables, reaction time, and preferences for publication type among university students.

PROCEDURES

If you volunteer to participate in this study, you will be asked to do the following things. Upon reading and endorsing this consent form, you will be directed to a reaction time task, which will take 5 minutes to complete. Subsequently, you will be directed to an online survey and a publication preferences selection task that will take approximately 25 minutes to complete. The total study will take 30 minutes to complete and will be completed in one session.

After completing the online survey, you will be directed to a subsequent form where you can fill in your personal information for verifying your bonus credit.

POTENTIAL RISKS AND DISCOMFORTS

You will be asked a variety of questions, which may be personal in nature. A risk associated with this study is the possibility that thinking about these personal issues may raise some psychological and emotional concerns for you. If you do experience discomfort, you are welcome to contact the primary investigator, Katelyn Boersma, to address your concerns. Alternatively, please feel free to contact Student Counselling Centre at 253-3000, ext. 4616.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

The benefit of participating in this research is the opportunity to learn about and contribute to psychological research. As well, you may find that you learn more about yourself through participating in this research.

COMPENSATION FOR PARTICIPATION

Participants will receive 0.5 bonus points for approximately 30 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain

confidential and will be disclosed only with your permission. Please note that we must collect your name and student number at the end of the study in order for you to receive bonus credit for your participation. Your data will be kept separate from your name and student number. Both files will be encrypted and stored in the University of Windsor data servers. The data will be destroyed five years after the publication of work associated with this research.

PARTICIPATION AND WITHDRAWAL

Your participation in this study is completely voluntary. If you decide to participate, you are free to withdraw from the study at any time without having to give a reason, without penalty, and without forfeiting your course credit. A decision not to participate will not affect your academic standing or your relationship with the university. You may also refuse to answer any questions you do not want to answer and still remain in the study. Following your participation, you may exercise the option of removing your data from this study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

Research findings for this study will be available to participants, and will be posted on the University of Windsor REB website.

Web address: www.uwindsor.ca/reb
Date when results are available: September 2015

SUBSEQUENT USE OF DATA

These data from this study may be used in subsequent studies, publications, and presentations. Only group data will be reported and no individual will be identified in any publication of the results.

RIGHTS OF RESEARCH PARTICIPANTS

This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

CONSENT OF RESEARCH PARTICIPANT

I understand the information provided for the study, **'**The Relationship Between Reaction Time and Individual Difference Variables Among University Students' as described herein. The nature and purposes of the research have been clearly explained, and I understand what is being proposed and what my participation in this study will involve. **I will print a copy of this consent form for my own reference**.

I have read the letter of information and consent, and I agree to participate in this study. By selecting 'Yes' below, I am providing my informed consent.

☐Yes
☐No

Please click 'Next' to proceed to the study.

Appendix F - Debriefing Form: Online Pilot Study

DEBRIEFING FOR DECEPTION

Weight-based derogatory media: Predictors of media selection, impact of exposure, and the moderating role of maladaptive appearance investment

Thank you for your participation in this study. Before explaining the true purpose of this research, it is important that you understand why it is necessary for some kinds of psychological studies not to tell people all about the purpose of the study at the very beginning. In some kinds of studies, if we tell people what the purpose of the experiment is and what we predict will happen, some participants might deliberately do whatever they think we want them to do, just to help us out and give us the results they think we want. Alternatively, other participants might deliberately do the opposite of what they think we want, maybe to show us that we can't figure them out. In either case, this would make the results invalid, because again, what people would be responding to is what they thought we were looking for rather than responding naturally.

You were told that we were looking at the relationship between individual difference variables, reaction time, and preferences for publication type among university students. However, the study that you just participated in was actually investigating variables that may predict selection of media that makes fun of women for gaining weight. The reaction time task that you completed was actually a measure of implicit (or unconsciously held) attitudes about fat. This study is a pilot study for a larger project about the impact of selecting this type of media on women's body image. There is research that suggests that exposure to media that makes fun of women for gaining weight has a negative impact on women's body image. We are interested in getting a better idea of variables that predict choosing to read media articles that focus on women's weight gain, as well as whether women who select these media who select if for themselves are differently impacted by it than women who we randomly assigned to view them.

In this pilot study you did not actually read the articles that accompany the headlines you rated because we were investigating whether informing you about whether or not you would receive your choice would impact your media selection or your mood. We will use these results to make methodological decisions about the larger study, where women will read the articles and we will investigate the effects of selecting these media on body image.

The information we gather in this pilot study, and the larger study, will give us a better idea of the real world impact of exposure to these media. This research is important because negative body image feelings are a major trigger for eating disorders. So, it's essential for psychologists to have as much information as possible about factors that may increase body image dissatisfaction. That is why we are conducting this study.

I want to assure you that the use of deception has concluded and we are no longer withholding information from you about this study. Now that you know the true purposes of the study, I will have to ask you not to say anything about this to anyone else. If you told someone else all the things that were just outlined, and then they participated in the study themselves, their reactions wouldn't be spontaneous and natural, and their results couldn't be used. If that happened, we wouldn't have enough data to make conclusions about the average person, so the whole study really would be for nothing. I hope you can see why it is extremely important that I ask you not to say anything about the study. You might think that it won't make a difference if you talk to your roommate about it because they'll never be in the study, but your roommate might say something to someone else who might be in the study. So, I would like to ask you not to say anything about the study, other than you filled out some questionnaires, until the end of the school year.

Some of the questionnaires we asked you to complete were personal in nature. Some of them might have made you think about past experiences you did not want to think about. Some people might be upset after completing these questionnaires, whereas others will not be upset at all. Both of these responses are perfectly normal. If you have any concerns, I encourage you to discuss your reactions with me. If you wish to talk to an outside party about any issues that

came to your attention today, please feel free to contact the **Student Counselling Centre at 519-253-3000 Ext. 4616.**

If you have any concerns at all about the study itself, or are interested in receiving more information, please feel free to contact the primary investigator, Katelyn Boersma, Department of Psychology, at boersmak@uwindsor.ca.

Appendix G - Consent to Data Retention: Online Survey

If you consent below, the data you have provided will be used in this study. You are free to decide to withdraw your consent without having to give a reason and without penalty. If you do not consent, the data will be destroyed.

"I have read and understand the information above and any questions have been answered to my satisfaction. I agree to allow my data to be used in this research, knowing that I can withdraw without consequence."

I agree to allow my data to be used in this research. By selecting 'Yes' below, I am providing my informed consent.

□ Yes
□ No

Appendix H - Experimental Materials

Weight-Based Derogatory Media Condition

Student life catching up to you, Lily? Model cuts a frumpy figure as she lands in Miami

It is called the 'freshman 15' in the United States and it refers to the number of pounds students gain during their first year at university. You might expect the maxim would not apply to international stars like our very own English rose, Lily Cole. However, yesterday at Miami International Airport the flame-haired beauty cut a distinctly frumpy figure.

Lily has just completed her first year at Cambridge University, where she is studying History of Art at King's College after taking a few gap years to concentrate on her acting career. But after this year's weight gain, she'll have to shape up before she's ready to reappear on-screen.

Her clearly rounder face and very noticeable muffin top gave her the appearance of someone who's munched on too many Pot Noodles. Rather than strut her stuff on the red carpet, the 25-year-old looked ready to slump on a sofa and watch Countdown. Lily, we think it's time to consider making better use of the excellent sporting facilities at King's College!

Dannii Minogue steps out in an unflattering pair of hotpants

Former X Factor UK judge Danii Minogue was spotted running errands yesterday in an unfortunate pair of hotpants that looked a size too small and gaped open at the pockets. The unflattering black and white garment clung to every lump and bump. The shorts also failed to hide what looked like a touch of cellulite on the Australian singer's thighs. It's shocking how much the star's figure has changed since she ended sessions with her long-time personal trainer, Sasha Curran. When Danii first shot to fame she was known for her sensational legs. You would never guess that from these photos though!

Constant travel is taking its toll on Leona Lewis' once stunning figure

X Factor winner Leona Lewis was recently spotted leaving a Starbucks looking significantly heavier than she was in March at Milan Fashion Week. Born and raised in Hackney, East London, the former Pizza Hut waitress has spent the last few months making frequent flights between Italy and London as she balances time between rehearsals, performances, and recording a Motown-inspired Christmas album. But constant travel appears to be taking its toll on the singer. According to close friends, Leona is so busy working and travelling that she never has time to cook and has started eating out most nights. It looks like all the fast food and high calorie gourmet meals that she's been eating are starting to settle on her arms, hips and thighs. Her stretchy leggings and flowing top help to conceal the added pounds, but if she wants to fit into her sexy evening gowns Leona will definitely need to start eating better.

Neutral Media Condition

A brief reprieve from student life! Model Lily Cole lands in Miami for a family vacation.

Actress Lily Cole has just completed her first year at Cambridge University, where she is studying History of Art at King's College after taking a few gap years to concentrate on her acting career. After spending a year hitting the books, Lily landed at Miami International Airport yesterday to join her family on a much deserved week long vacation.

Leaving the big screen for college is a bit of an unusual choice in the entertainment world, but Lily is more traditional and down to earth than most international stars. Lily's friends report that, just like most other first year students, the 25-year-old really felt the pressure of final exams. She spent countless hours studying, and tried to de-stress by taking breaks to watch Countdown and other favourite shows.

After putting in all that hard work, we're glad to hear that this English rose is taking some time off to relax with her mother and sisters in sunny Miami. Just don't forget the sunscreen Lily!

Danii Minogue is shaken after being rear ended by a driver in East London

Danii Minogue was out running errands earlier this week when she was hit from behind by a careless driver. Luckily, the damage to her vehicle was only minor, but the accident definitely appears to have shaken up the star. The former X Factor UK judge appeared rather stiff as she walked towards the other driver to exchange information. Although she was uninjured, she immediately called friends to pick her up and drive her car home. However, the star was spotted yesterday out on her Vespa, so we think it's safe to assume she has gotten over her shock.

Coffee Break for Leona Lewis

X Factor winner Leona Lewis was recently spotted leaving a Starbucks near her recording studio two delicious coffees. Born and raised in Hackney, East London, the former Pizza Hut waitress has spent the last few months making frequent flights between Italy and London as she balances time between rehearsals, performances, and recording a Motown-inspired Christmas album. However, according to friends and family, this busy schedule is leaving the 28-year-old singer exhausted and missing her loved ones. Leona has been travelling nearly non-stop for months, but even so, she still found the time to make it home for her seven-year old niece's birthday party. To help keep in touch Leona has made daily phone calls to her parents and boyfriend, dancer and choreographer Dennis Jaunch. Luckily, Leona won't have to be away from her boyfriend for too much longer. Dennis plans to join her in Italy later this month for a much needed visit.

Appendix I – Original Versions of Experimental Materials from Boersma and Jarry (2013)

Weight-Based Derogatory Media Condition

Student life catching up to you, Lily? Model cuts a frumpy figure as she lands in Miami

It is called the 'freshman 15' in the United States and it refers to the number of pounds students gain during their first year at university. You might expect the maxim would not apply to international stars like our very own English rose, Lily Cole. However, yesterday at Miami International Airport the flame-haired beauty cut a distinctly frumpy figure.

Lily has just completed her first year at Cambridge University, where she is studying History of Art at King's College after taking two gap years to concentrate on her acting career. But after this year's weight gain, she'll have to shape up before she's ready to reappear on-screen.

Her clearly rounder face and very noticeable muffin top gave her the appearance of someone who's munched on too many Pot Noodles. Rather than strut her stuff on the red carpet, the 22-year-old looked ready to slump on a sofa and watch Countdown. Lily, we think it's time to consider making better use of the excellent sporting facilities at King's College!

Dannii Minogue steps out in an unflattering pair of hotpants

X Factor judge Danii Minogue was spotted running errands yesterday in an unfortunate pair of hotpants that looked a size too small and gaped open at the pockets. The unflattering black and white garment clung to every lump and bump. The shorts also failed to hide what looked like a touch of cellulite on the Australian singer's thighs. It's shocking how much the star's figure has changed since she ended sessions with her long-time personal trainer, Sasha Curran. When Danii first shot to fame she was known for her sensational legs. You would never guess that from these photos though!

LA life is taking its toll on Leona Lewis' once stunning figure

X Factor winner Leona Lewis was recently spotted leaving a Starbucks in L.A. looking significantly heavier than she was 3 months ago at the Elle Style Awards. Born and raised in Hackney, East London, the former Pizza Hut waitress relocated to L.A. last year to record an album. But L.A. life appears to be taking its toll on the singer. According to close friends, Leona is so busy working she never has time to cook and has started eating out most nights. It looks like all the fast food and high calorie gourmet meals that she's been eating are starting to settle on her arms, hips and thighs. Her stretchy leggings and flowing top help to conceal the added pounds, but if she wants to fit into her sexy evening gowns Leona will definitely need to start eating better.

Neutral Media Condition

A brief reprieve from student life! Model Lily Cole lands in Miami for a family vacation.

Actress Lily Cole has just completed her first year at Cambridge University, where she is studying History of Art at King's College after taking two gap years to concentrate on her acting career. After spending a year hitting the books, Lily landed at Miami International Airport yesterday to join her family on a much deserved week long vacation.

Leaving the big screen for college is a bit of an unusual choice in the entertainment world, but Lily is more traditional and down to earth than most international stars. Lily's friends report that, just like most other first year students, the 22-year-old really felt the pressure of final exams. She spent countless hours studying, and tried to de-stress by taking breaks to watch Countdown and other favourite shows.

After putting in all that hard work, we're glad to hear that this English rose is taking some time off to relax with her mother and sisters in sunny Miami. Just don't forget the sunscreen Lily!

Danii Minogue is shaken after being rear ended by a driver in East London

Danii Minogue was out running errands earlier this week when she was hit from behind by a careless driver. Luckily, the damage to her vehicle was only minor, but the accident definitely appears to have shaken up the star. The X Factor judge appeared rather stiff as she walked towards the other driver to exchange information. Although she was uninjured, she immediately called friends to pick her up and drive her car home. However, the star was spotted yesterday out on her Vespa, so we think it's safe to assume she has gotten over her shock.

Coffee Break for Leona Lewis

X Factor winner Leona Lewis was recently spotted leaving a Starbucks near her recording studio in L.A. with two delicious coffees. Born and raised in Hackney, East London, the former Pizza Hut waitress relocated to L.A. last year to record an album. However, according to friends and family, the 24-year-old singer is having a very difficult time being so far away from home. Since leaving last February, Leona has returned to London three times to visit with loved ones and attend her three-year old niece's birthday party. While she has been away, Leona has made daily phone calls to her parents and boyfriend, electrician Lou Al-Chamaa. Luckily, Leona won't have to be away from her longtime boyfriend for too much longer. Lou plans to travel to L.A. next month for a two-week visit.

Appendix J - Appearance Schemas Activation – Word Stem Completion Task

Please complete the following stems with whatever word comes to your mind first. For example;

EXA _____ → EXAmple or EXAmination or EXA……

FRE _____ → FREeze or FREe_____ or FRE…….

1. PRE_____
2. CAL_____
3. BIN_____
4. SCA_____
5. GOR_____
6. DIE_____
7. THI_____
8. SLE_____
9. PLU_____
10. SLI_____
11. SKI_____
12. HAN_____
13. BLO_____
14. GRO_____
15. OBE_____
16. PET_____
17. CHE_____
18. MUS_____
19. CEL_____
20. WAI_____

Appendix K - Participant Pool Recruitment Advertisement

Title: Study 1: The Relationship Between Reaction Time and Individual Difference Variables Among University Students; Study 2: The Influence of Publication Type and Individual Differences on Memory for Information about People
Researchers: Katelyn Boersma, Dr. Josée Jarry
Duration: Study 1: 30 minutes / Study 2: 60 minutes
Credits: Study 1: 0.5 credits / Study 2: 1 credit

Description:

The purpose of Study 1 is to examine the relationship between individual difference variables and reaction time among university students. This study is completed in an on-line format and your responses will be kept completely confidential. You will be asked to complete a 5-minute reaction time task, followed by a series of brief questionnaires related to mood and personality. This study will take approximately 30 minutes to complete and will be done in one session. Once you sign up for Study 1 you will be e-mailed information to access the survey. Once you have completed Study 1, the primary researcher will contact you via e-mail to sign up for a time to complete Study 2.

The purpose of Study 2 is to examine the factors that influence memory for information about people. The factors of interest are: (a) personality differences, and b) the type of publication used to present the information. Studies 1 and 2 are being offered together to maximize the efficiency of recruitment and ensure that participants are familiar with the reaction time task used in Study 1, as it will be used as a distractor task in the memory study. Study 2 will be conducted in the lab. If you choose to participate in this study you will be asked to read and attempt to remember information presented in a series of three articles. After reading the articles you will complete a packet of questionnaires assessing individual difference variables, and 2 distractor tasks, including the 5-minute reaction time task from study 1. Finally, you will complete a multiple-choice format memory test. Study 2 will take approximately 60 minutes to complete and will be done in one session.

Appendix L - Informed Consent Form: Online Survey

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: **Reaction Time and Individual Differences**

You are asked to participate in a research study conducted by Katelyn Boersma, supervised by Dr. Josée Jarry, from the Department of Psychology at the University of Windsor. The results of this study will be used to fulfil the requirements of a Doctoral dissertation.

If you have any questions or concerns about the research, please feel to contact the primary investigator, Katelyn Boersma at boersmak@uwindsor.ca, or the faculty supervisor, Dr. Josée Jarry at (519) 253-3000, extension 2237.

PURPOSE OF THE STUDY

The purpose of this study is to examine the relationship between individual difference variables and reaction time among university students.

PROCEDURES

If you volunteer to participate in this study, you will be asked to do the following things. By consenting below you are indicating that you wish to participate in the present study. Upon reading and endorsing this consent form, you will be directed to a reaction time task, which will take 5 minutes to complete. Subsequently, you will be directed to an online survey that will take approximately 25 minutes to complete. The total study will take 30 minutes to complete and will be completed in one session.

After completing the online survey, you will be directed to a subsequent form where you can fill in your personal information for verifying your bonus credit. Successful completion of the online survey will qualify you for a separate study that is currently being conducted in the University of Windsor psychology department.

POTENTIAL RISKS AND DISCOMFORTS

You will be asked a variety of questions, which may be personal in nature. A risk associated with this study is the possibility that thinking about these personal issues may raise some psychological and emotional concerns for you. If you do experience discomfort, you are welcome to contact the primary investigator, Katelyn Boersma, to address your concerns. Alternatively, please feel free to contact Student Counselling Centre at 253-3000, ext. 4616.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

The benefit of participating in this research is the opportunity to learn about and contribute to psychological research. As well, you may find that you learn more about yourself through participating in this research.

COMPENSATION FOR PARTICIPATION

Participants will receive 0.5 bonus points for approximately 30 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Pleas note that we must collect your name and student number at the end of the study in order for you to receive bonus credit for your participation. Your data will be kept separate from your name and student number. Both files will be encrypted and stored in the University of Windsor data servers. The data will be destroyed five years after the publication of work associated with this research.

PARTICIPATION AND WITHDRAWAL

Your participation in this study is completely voluntary. If you decide to participate, you are free to withdraw from the study at any time without having to give a reason, without penalty, and without forfeiting your course credit. A decision not to participate will not affect your academic standing or your relationship with the university. You may also refuse to answer any questions you do not want to answer and still remain in the study. Following your participation, you may exercise the option of removing your data from this study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

Research findings for this study will be available to participants, and will be posted on the University of Windsor REB website.

Web address: www.uwindsor.ca/reb
Date when results are available: September 2015

SUBSEQUENT USE OF DATA

These data from this study may be used in subsequent studies, publications, and presentations. Only group data will be reported and no individual will be identified in any publication of the results.

RIGHTS OF RESEARCH PARTICIPANTS

This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

CONSENT OF RESEARCH PARTICIPANT

I understand the information provided for the study, ‘The Relationship Between Reaction Time and Individual Difference Variables Among University Students’ as described herein. The nature and purposes of the research have been clearly explained, and I understand what is being proposed and what my participation in this study will involve. **I will print a copy of this consent form for my own reference**.

I have read the letter of information and consent, and I agree to participate in this study. By selecting 'Yes' below, I am providing my informed consent.

☐Yes
☐No

Please click 'Next' to proceed to the study.

Appendix M - General Instructions: Online Survey

Please complete this survey in a quiet place that is free from distractions. Be sure to read all instructions carefully before answering any questions.

Keep in mind that there are no right or wrong answers. Try to answer all of the items, even if you are not certain of the best answer. Please answer the questions as openly and honestly as possible. Your true thoughts and feelings are extremely valuable to us, and we want to make sure all your responses in this survey reflect how you really feel.

Appendix N - Post-Study Information: Online Survey

Thank you for your participation.

Your time and willingness to participate in this study are greatly appreciated.

If you have any concerns at all about the study itself, or are interested in receiving more information, please feel free to contact the primary investigator, Katelyn Boersma, Department of Psychology, at boersmak@uwindsor.ca. **Please print this page for your reference.**

If you wish to talk to an outside party about any issues that came to your attention today, contact the Student Counselling Centre at 519-253-3000 Ext. 4616.

Other community resources:

Community Crisis Centre of Windsor
Telephone: (519) 973-4435
Website: http://windsoressex.cioc.ca/record/WIN0762

Distress Centre - Windsor-Essex County
Telephone: (519) 256-5000
Website: www.dcwindsor.com

Appendix O – Informed Consent Form: Laboratory Study

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: **Influence of publication type on memory**

You are asked to participate in a research study conducted by Katelyn Boersma, supervised by Dr. Josée Jarry, from the Department of Psychology at the University of Windsor. The results of this study will be used to fulfil the requirements of a Doctoral dissertation.
If you have any questions or concerns about the research, please feel to contact the primary investigator, Katelyn Boersma at boersmak@uwindsor.ca, or the faculty supervisor, Dr. Josée Jarry at (519) 253-3000, extension 2237.

PURPOSE OF THE STUDY
The purpose of the study is to examine the factors that influence memory for information about people. The factors of interest are: (a) personality differences, and b) the type of publication used to present information.

PROCEDURES

If you volunteer to participate in this study, you will be asked to do the following things. By signing this consent form you are indicating that you wish to participate in the present study. Upon reading and endorsing this consent form, you will be asked to read descriptions of three females for a total of up to 10 minutes. Next, you will complete two distractor tasks and a series of questionnaires. Finally, you will complete a multiple choice format memory test on the information presented to you about the three target females. The study will require approximately 60 minutes to complete. You will remain in this room for the duration of the study.

POTENTIAL RISKS AND DISCOMFORTS

You will be asked a variety of questions which may be personal in nature. A risk associated with this study is the possibility that thinking about these personal issues may raise some psychological and emotional concerns for you.. You will be provided with the opportunity to discuss these concerns thoroughly with the experimenter. If you have any concerns you wish to discuss with an independent party, please feel free to contact the Student Counselling Centre at 519-253-3000 Ext. 4616.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

The benefit of participating in this research is the opportunity to learn about and contribute to psychological research. As well, you may find that you learn more about yourself through participating in this research. The benefit to society is increasing scientific knowledge in the area of person memory.

COMPENSATION FOR PARTICIPATION

Participants will receive 1 bonus point for approximately 60 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Any information you provide will be used for research

purposes only, which may eventually include publication in a research article. You will only be required to put your name on the consent form. To ensure confidentiality, on all measures you will be identified by participant number only, and there will be no identifying features on the questionnaires. The data will be destroyed five years after the publication of work associated with this research.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you decide to participate, you are free to withdraw from further participation in the research at any time without having to give a reason, without penalty, and without forfeiting your bonus credit. A decision not to participate will not affect your academic standing or your relationship with the university. Following your participation, you may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so (e.g. very incomplete questionnaires).

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

Research findings for this study will be available and posted on the University of Windsor REB website.
Web address: www.uwindsor.ca/reb
Date when results are available: September 2015

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications, and in presentations. If published, only group data will be reported and no individual will be identified in any publication of the results.

RIGHTS OF RESEARCH PARTICIPANTS

This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study, 'The influence of publication type and individual differences on memory for information about people' as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I will print a copy of this consent form for my own reference.

SIGNATURE OF PARTICIPANT

_____
Name of Participant

_____ _____
Signature of Participant Date

SIGNATURE OF INVESTIGATOR
In my judgement, the participant is voluntarily and knowingly giving informed consent to participate in this research study. These are the terms under which I will conduct research.

_____ _____
Signature of Investigator Date

Appendix P - Manipulation Check: Memory Test
Neutral Media Version

1. Before she became famous, Leona Lewis worked as a _____.
   a) Pizza Hut waitress
   b) Golf instructor
   c) McDonald's employee
   d) Teacher

2. Leona Lewis was spotted leaving _____.
   a) Pizza Hut
   b) The Gap
   c) Starbucks
   d) Her home

3. Leona Lewis was born and raised in _____.
   a) Hackney, East London
   b) North London
   c) Scotland
   d) Ireland

4. Leona Lewis' boyfriend works as a(n) _____.
   a) Lawyer
   b) Chef
   c) Dancer/ Choreographer
   d) Producer

5. Leona Lewis appeared on which television show:
   a) X Factor
   b) Pop Idol
   c) The Apprentice UK
   d) Britain's Next Top Model

6. Danii Minogue was recently involved in:
   a) A car accident
   b) A motor boating accident
   c) A motorcycle accident
   d) A sailboat accident

7. The damage to her mode of transportation was:
   a) Minor
   b) Moderate
   c) Severe
   d) There was no damage

8. As a result of the accident, Danii Minogue experienced:

a) A broken leg
b) A broken arm
c) No injuries
d) Life threatening injuries

9. Danii Minogue was a judge on:
a) X Factor UK
b) Pop Idol
c) The Apprentice UK
d) Britain's Next Top Model

10. A few days after the accident, Danii Minogue was spotted:
a) At a horse ranch
b) Driving to work
c) At a Starbucks
d) Riding a Vespa

11. Lily Cole just completed her _____ year of university.
a) First
b) Second
c) Third
d) Fourth

12. Lily Cole is studying:
a) Biology
b) Chemistry
c) Physics
d) History of Art

13. Lily likes to de-stress after studying by:
a) Watching shows like Countdown
b) Reading
c) Swimming
d) Taking a bath

14. Lily Cole went on vacation with:
a) Her boyfriend
b) Her best friend
c) Her family
d) Her agent

15. Lily Cole went to _____ on her vacation.
a) Brazil
b) Hawaii
c) Miami
d) Mexico

Derogatory Media Version

1. Before she became famous, Leona Lewis worked as a _____.
   a) Pizza Hut waitress
   b) Golf instructor
   c) McDonald's employee
   d) Teacher

2. Leona Lewis was spotted leaving _____.
   a) Pizza Hut
   b) The Gap
   c) Starbucks
   d) Her home

3. Leona Lewis was born and raised in _____.
   a) Hackney, East London
   b) North London
   c) Scotland
   d) Ireland

4. Leona Lewis appeared significantly heavier than she in March at _____.
   a) The Brit Awards
   b) The British Independent Film Awards
   c) The Elle Style Awards
   d) Milan Fashion Week

5. Leona Lewis has been flying between London and _____.
   a) France
   b) Italy
   c) Romania
   d) Poland

6. Danii Minogue was a judge on:
   a) X Factor UK
   b) Pop Idol
   c) The Apprentice UK
   d) Britain's Next Top Model

7. Danii Minogue was wearing a pair of _____ hotpants.
   a) green
   b) orange
   c) black and white
   d) pink

8. Danii Minogue was criticized for _____.
   a) Behaving inappropriately

b) Having cellulite on her legs
c) Having an unsightly mole
d) Having flabby arms

9. Danii Minogue is originally from _____.
   a) England
   b) Australia
   c) New Zealand
   d) Ireland

10. Danii Minogue recently stopped seeing _____.
    a) Her therapist
    b) Her personal trainer
    c) Her boyfriend
    d) Her best friend

11. Lily Cole just completed her _____ year of university.
    a) First
    b) Second
    c) Third
    d) Fourth

12. Lily Cole is studying:
    a) Biology
    b) Chemistry
    c) Physics
    d) History of Art

13. According to the article, Lily should spend more time:
    a) Exercising
    b) Reading
    c) Watching shows like Countdown
    d) Visiting with family

14. According to the article, Lily had the appearance of someone who'd munched on too many _____.
    a) Sweets
    b) French Fries
    c) Pot Noodles
    d) Doughnuts

15. Lily Cole travelled to _____.
    a) Brazil
    b) Hawaii
    c) Miami
    d) Mexico

Appendix Q - Letter of Information: Laboratory Session

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: **Influence of Publication Type on Memory**

You are asked to participate in a research study conducted by Katelyn Boersma, supervised by Dr. Josée Jarry, from the Department of Psychology at the University of Windsor. The results of this study will be used to fulfil the requirements of a Doctoral dissertation.
If you have any questions or concerns about the research, please feel to contact the primary investigator, Katelyn Boersma at boersmak@uwindsor.ca, or the faculty supervisor, Dr. Josée Jarry at (519) 253-3000, extension 2237.

PURPOSE OF THE STUDY

The purpose of the study is to examine the factors that influence memory for information about people. The factors of interest are: (a) personality differences, and b) the type of publication used to present information.

PROCEDURES

If you volunteer to participate in this study, you will be asked to do the following things. By signing this consent form you are indicating that you wish to participate in the present study. Upon reading and endorsing this consent form, you will be asked to read descriptions of three females for a total of up to 10 minutes. Next, you will complete two distractor tasks and a series of questionnaires. Finally, you will complete a multiple choice format memory test on the information presented to you about the three target females. The study will require approximately 60 minutes to complete. You will remain in this room for the duration of the study.

POTENTIAL RISKS AND DISCOMFORTS

You will be asked a variety of questions which may be personal in nature. A risk associated with this study is the possibility that thinking about these personal issues may raise some psychological and emotional concerns for you.. You will be provided with the opportunity to discuss these concerns thoroughly with the experimenter. If you have any concerns you wish to discuss with an independent party, please feel free to contact the Student Counselling Centre at 519-253-3000 Ext. 4616.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

The benefit of participating in this research is the opportunity to learn about and contribute to psychological research. As well, you may find that you learn more about yourself through participating in this research. The benefit to society is increasing scientific knowledge in the area of person memory.

COMPENSATION FOR PARTICIPATION

Participants will receive 1 bonus point for approximately 60 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Any information you provide will be used for research

purposes only, which may eventually include publication in a research article. You will only be required to put your name on the consent form. To ensure confidentiality, on all measures you will be identified by participant number only, and there will be no identifying features on the questionnaires. The data will be destroyed five years after the publication of work associated with this research.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you decide to participate, you are free to withdraw from further participation in the research at any time without having to give a reason, without penalty, and without forfeiting your bonus credit. A decision not to participate will not affect your academic standing or your relationship with the university. Following your participation, you may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so (e.g. very incomplete questionnaires).

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

Research findings for this study will be available and posted on the University of Windsor REB website.
Web address: www.uwindsor.ca/reb
Date when results are available: September 2015

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications, and in presentations. If published, only group data will be reported and no individual will be identified in any publication of the results.

RIGHTS OF RESEARCH PARTICIPANTS

This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR

In my judgement, the participant is voluntarily and knowingly giving informed consent to participate in this research study. These are the terms under which I will conduct research.

_____ _____

Signature of Investigator Date

Appendix R - Debriefing For Deception Form

First, I would like to hear from you what you think about what we did today, any impressions about this study? [Give participant the time needed to answer, note answers]

If participant says they suspected something about body image or anti-fat attitudes, ask them:

A) What did they think the hypotheses of the study were?

B) When did they start forming these ideas?

Do you regularly follow the lives of any of the celebrities you read about today?

If yes:

A) Was the information presented in the articles consistent with your knowledge about the celebrities?

Note any discrepancies – particularly about the Lily Cole article:

There is more to this study than I have told you about so far. But before I tell you exactly what it is, I would like to explain why it is necessary for some kinds of psychological studies not to tell people about the purpose of the study at the very beginning. In some kinds of studies, if we tell people what the purpose of the experiment is and what we predict will happen, some participants might deliberately do whatever they think we want them to do, just to help us out and give us the results they think we want. Alternatively, other participants might deliberately do the opposite of what they think we want, maybe to show us that we can't figure them out. In either case, these participants' reactions would not be a good indication of how they might react in a situation in everyday life, when they didn't think they were being studied. This would make the results of the study not very informative. Therefore, can you see why in some studies we can't tell people about the purpose of the study at the beginning, because it would influence the results and make the data invalid? [Pause and give the participants a chance to ask questions or comment].

Now I would like to explain exactly what we are trying to get at in this study. We told you that we were looking at the effects of publication type and individual differences on memory for information about people. However, the study that you just participated in actually looked at the effects of exposure to media that makes fun of women for gaining weight on how women feel about their own bodies and other peoples' bodies. Only some of the articles used in this study actually

derogated a woman for gaining weight. In the neutral media condition, all of the articles provided neutral information about the lives of female celebrities, whereas in the derogatory media condition all of the articles were derogatory. We are going to compare the responses of people in the neutral media condition to responses of people in the derogatory media condition to see if exposure to media that makes fun of women for gaining weight impacts how women feel about their own bodies and other peoples' bodies.

There is research that suggests that exposure to thin media images makes people feel bad about how they look, and makes them try to change their appearance with unhealthy strategies. In this study, we are trying to figure out whether exposure to media that makes fun of women for gaining weight also will make women feel bad about how they look. Additionally, there is research that suggests that exposure to certain types of media may change peoples' implicit or unconscious attitudes towards overweight individuals. That's why we had you complete that reaction time task. It actually measures implicitly held anti-fat attitudes. In this study we are trying to find out if exposure to media that makes fun of women for gaining weight will increase negative attitudes towards overweight individuals.

We are also interested in getting a better idea of variables that predict choosing to read media articles that focus on women's weight gain, as well as whether women who select these media are differently impacted by it than women who we randomly assigned to view them. This information will give us a better idea of the real world impact of exposure to these media.

This research is important because negative body image feelings are a major trigger for eating disorders. So, it's essential for psychologists to have as much information as possible about factors that may increase body image dissatisfaction. That is why we are conducting this study.

There were a few instances during the course of this study where we were required to be deceptive. The first instance was the presentation of the purpose of that first online study as an investigation of reaction time and individual difference variables. We were really gathering information that we will use to try to predict participant's selection of media. Secondly, we were deceptive about presenting the purpose of the lab study you just completed as a memory investigation.

We were also deceptive about the purpose of the tasks, such as why you read the articles, completed so-called distractor tasks, filled out the questionnaires, and completed the multiple-choice test. The multiple-choice test at the end of this study was only given so we can be sure that participants actually read the articles. I hope you can see why it was important that deception was used in this study. Do you understand why we had to do that? Do you have any questions? [Pause and allow participant to talk about this if they had any concerns or questions]. Once again, I want to assure you that the use of deception has concluded and we are no longer withholding information from you about this study.

Your participation in research is very important. In a study like this where we didn't give you all the information up front, we want to make sure that you are satisfied with your participation and that you wish to keep your data in the study. If you tell me now that you do not want your data to be used, we will remove it from our pool of data. Do you want to keep your data in the study, or have it

removed? Do you have any questions about that?

Finally, I will have to ask you not to say anything about the true purpose of the study to anyone else. If you told someone else all the things that I just told you, and then they participated in the study themselves, their reactions wouldn't be spontaneous and natural, and their results couldn't be used. If that happened, we wouldn't have enough data to make conclusions about the average person, so the whole study really would be for nothing. You might think that it won't make a difference if you talk to your roommate about it because they'll never be in the study, but your roommate might say something to someone else who might be in the study. So, I would like to ask you not to say anything about the study, other than that you read some articles, filled out some questionnaires, and did a memory test. Will you promise me that you will not tell others about the study, at least until the end of the school year?

We also want to let you know that we realize that some of the questionnaires we asked you to complete were personal in nature. Some of them might have made you think about past experiences you did not want to think about. Some people might be upset after completing questionnaires, whereas others will not be upset at all. Both of these responses are perfectly normal. If you have any concerns, I really want to encourage you to discuss your reactions with me, either now or later on. I will give you a way to contact both me and my research advisor. If you would prefer to discuss your reactions to the study with someone else, we will give you a list of resources on and off campus that you may contact.

We hope you found your experience of participating in this study interesting. I would be glad to answer any questions you might have.

Appendix S - Letter of Information for Debriefing and Consent to Data Retention

LETTER OF INFORMATION FOR DEBRIEFING AND CONSENT TO DATA RETENTION

Weight-based derogatory media: Predictors of media selection, impact of exposure, and the moderating role of maladaptive appearance investment

Thank you for your participation in this study. Before explaining the true purpose of this research, it is important that you understand why it is necessary for some kinds of psychological studies not to tell people all about the purpose of the study at the very beginning. In some kinds of studies, if we tell people what the purpose of the experiment is and what we predict will happen, some participants might deliberately do whatever they think we want them to do, just to help us out and give us the results they think we want. Alternatively, other participants might deliberately do the opposite of what they think we want, maybe to show us that we can't figure them out. In either case, this would make the results invalid, because again, what people would be responding to is what they thought we were looking for rather than responding naturally.

You were told that we were looking at the effects of publication type and individual differences on memory for information about people. However, the study that you just participated in actually looked at the effects of exposure to media that makes fun of women for gaining weight on how women feel about their own bodies and other peoples' bodies. Only some of the articles used in this study actually derogated a woman for gaining weight. In the neutral media condition, all of the articles provided neutral information about the lives of female celebrities, whereas in the derogatory media condition all of the articles were derogatory. We are going to compare the responses of people in the neutral media condition to responses of people in the derogatory media condition to see if exposure to media that makes fun of women for gaining weight impacts how women feel about their own bodies and other peoples' bodies.

There is research that suggests that exposure to thin media images makes people feel bad about how they look, and makes them try to change their appearance with unhealthy strategies. In this study, we are trying to figure out whether exposure to media that makes fun of women for gaining weight also will make women feel bad about how they look. Additionally, there is research that suggests that exposure to certain types of media may change peoples' implicit or unconscious attitudes towards overweight individuals. That's why we had you complete that reaction time task. It actually measures implicitly held anti-fat attitudes. In this study we are trying to find out if exposure to media that makes fun of women for gaining weight will increase negative attitudes towards overweight individuals.

We are also interested in getting a better idea of variables that predict choosing to read media articles that focus on women's weight gain, as well as whether women who select these media are differently impacted by it than women who we randomly assigned to view them. This information will give us a better idea of the real world impact of exposure to these media. This research is important because negative body image feelings are a major trigger for eating disorders. So, it's essential for psychologists to have as much information as possible about factors that may increase body image dissatisfaction. That is why we are conducting this study.

There were a few instances during the course of this study where we were required to be deceptive. The first instance was the presentation of the purpose of that first online study as an investigation of reaction time and individual difference variables. We were really gathering information that we will use to try to predict participant's selection of media. Secondly, we were deceptive about presenting the purpose of the lab study you just completed as a memory investigation. We were also deceptive about the purpose of the tasks, such as why you read the articles, completed so-called distractor tasks, filled out the questionnaires, and completed the multiple-choice test. The multiple-choice test at the end of this study was only given so we can be sure that participants actually read the articles. I want to assure you that the use of deception has concluded and we are no longer withholding information from you about this study.

Now that you know the true purposes of the study, I will have to ask you not to say anything about this to anyone else. If you told someone else all the things that I just told you, and then they participated in the study themselves, their reactions wouldn't be spontaneous and natural, and their results couldn't be used. If that happened, we wouldn't have enough data to make conclusions about the average person, so the whole study really would be for nothing. I hope you can see why it is extremely important that I ask you not to say anything about the study. You might think that it won't make a difference if you talk to your roommate about it because they'll never be in the study, but your roommate might say something to someone else who might be in the study. So, I would like to ask you not to say anything about the study, other than you did filled out some questionnaires and did a memory test, until the end of the school year.

Some of the questionnaires we asked you to complete were personal in nature. Some of them might have made you think about past experiences you did not want to think about. Some people might be upset after completing these questionnaires, whereas others will not be upset at all. Both of these responses are perfectly normal. If you have any concerns, I encourage you to discuss your reactions with me. If you wish to talk to an outside party about any issues that came to your attention today, please feel free to contact the **Student Counselling Centre at 519-253-3000 Ext. 4616.**

If you have any concerns at all about the study itself, or are interested in receiving more information, please feel free to contact the primary investigator, Katelyn Boersma, Department of Psychology, at boersmak@uwindsor.ca.

If you consent below, the data you have provided will be used in this study. You are free to decide not to consent without having to give a reason and without penalty. If you do not consent, the data will be destroyed.

I have read and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to allow my data to be used in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name:_____

Participant's Signature: _____Date: _____

Investigator's Signature: _____Date:_____

If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca. Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Appendix T – Weight/ Height Consent Form

WEIGHT/HEIGHT MEASUREMENT CONSENT FORM

You have just participated in a research study conducted by Katelyn Boersma and Dr. Josée Jarry at the University of Windsor entitled:

Weight-based derogatory media: Predictors of media selection, impact of exposure, and the moderating role of maladaptive appearance investment

As a final part of the study you have just completed, you have been asked to allow the investigator to obtain a measure of your height and weight, so your body mass index (BMI) can be calculated.

The information you provide the investigator will remain confidential and will be disclosed only with your permission. Any information you provide will be used for research purposes only, which may eventually include publication of a research article.

Taking part in this final portion of the study is completely voluntary. If you do not wish to be weighed or have your height measured, you are free to refuse without any penalty or loss of bonus points.

If you are willing to participate in this study and understand all that will be asked of you in participating, please sign your name following this consent statement.

I hereby acknowledge that, after reading this statement, I am willing to allow the investigator to measure my height and weight. I understand that all information I provide will be used for research purposes only and that confidentiality is assured. I also realize I am free to withdraw from the study at any time without penalty.

_____
Name of Participant

_____ _____
Signature of Participant Date

_____ _____
Signature of Investigator Date

VITA AUCTORIS

Name:	Katelyn Elizabeth Boersma
Place of Birth:	Newmarket, Ontario
Year of Birth:	1986
Education:	Ph.D., Adult Clinical Psychology University of Windsor Windsor, ON 2017
	M.A., Adult Clinical Psychology University of Windsor Windsor, ON 2011
	B.Sc. (Hons), Psychology University of Toronto Toronto, ON 2008