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Submitted: 5 May 2011

UNIVERSITY OF CALIFORNIA, MERCED

**Effects of exposure to idealized body portrayals in an ethnically
diverse sample of men and women**

A dissertation submitted in partial satisfaction of the
requirements for the degree
Doctor of Philosophy

in

Psychological Sciences

by

Małgorzata Skorek

Committee in charge:

Assistant Professor Yarrow Dunham, Chair
Assistant Professor Anna V. Song
Associate Professor Jack L. Vevea

2011

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The dissertation of Małgorzata Skorek is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

Chair

University of California, Merced

2011

DEDICATION

To my parents, Halina & Andrzej

All that I am
and ever hope to be,
I owe to You.

EPIGRAPH

*One never goes so far
as when one doesn't know where one is going.*

–Johann Wolfgang von Goethe

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PUBLICATIONS

Peer Reviewed Journal Articles

Skorek, M., & Dunham, Y. (under review). Self-enhancement following exposure to idealized body portrayals in ethnically diverse men: A fantasy effect of advertising.

Skorek, M., & Dunham, Y. (under review). Who is harmed by media portrayed thinness? A review of personal moderators.

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Song, A. V., & **Skorek, M.** (under review). Conceptual distinctions between risk perception and threat perception: Empirical investigations across health situations.

Skorek, M., & Schreier, M. (under review). A cross-cultural comparison of gender role portrayals in magazine advertisements: Germany, Poland, and the United States.

Wessler, H., **Skorek, M.**, Kleinen-von-Königslöw, K., Held, M., Dobрева, M., & Adolphsen, M. (2008). Comparing media systems and media content: Online newspapers in ten Eastern and Western European countries. *Journal of Global Mass Communication*, 1: 165-189.

Book Chapters

Skorek, M. (2010). A thin line between being straight or gay: Portrayal of lesbian women in advertising. In *Queers in American Popular Culture*, volume 3 'Sport, leisure, and lifestyle' (pp. 227-237), edited by J. Elledge. Santa Barbara: Praeger.

Skorek, M. (2010). Portrayal of Asian Americans in U.S. magazine advertisements. In *One World Periphery Reads the Other: Knowing the 'Oriental' in the Americas and the Iberian Peninsula* (pp. 330-345), edited by I. Lopez-Calvo. Newcastle, England: Cambridge Scholars Publishing.

Wessler, H., **Skorek, M.**, Kleinen-von-Königslöw, K., Held, M., Dobрева, M., & Adolphsen, M. (2010). Comparing media systems and media content: Online newspapers in ten Eastern and Western European countries. In *Comparative media systems: European and global perspectives* (pp. 233-260), edited by B. Dobek-Ostrowska, M. Głowacki, K. Jakubowicz, & M. Sukosd. Budapest: Central European University.

Conference Paper Presentations

Skorek, M., & Dunham, Y. (2011). *A 'fantasy effect' of viewing idealized body portrayals in men.* Paper presented at the 91st Annual Convention of the Western Psychological Association, Los Angeles, CA, USA, April 28 - May 1, 2011.

Skorek, M., & Song, A. V. (2011). *The underlying differences of threat and risk.* Paper presented at the 91st Annual Convention of the Western Psychological Association, Los Angeles, CA, USA, April 28 - May 1, 2011.

Skorek, M., & Schreier, M. (2009). *A comparison of gender role portrayals in magazine advertisements from Germany, Poland and the United States.* **Visual Communication Studies top paper** presented at the 59th Annual Conference of the International Communication Association, Chicago, IL, May 21-25, 2009.

Skorek, M. (2009). *Portrayal of Asian Americans in U.S. magazine advertising.* Paper presented at the 2nd International Conference on Orientalisms 'East reads West; West reads East', University of California, Merced, CA, April 24-25, 2009.

Wessler, H., **Skorek, M.**, Adolphsen, M., Dobрева, M., & Held, M. (2007). *Journalisms in Europe: Comparing reporting styles and levels of Europeanization in Eastern and Western Europe.* Paper presented at the 57th Annual Conference of the International Communication Association, San Francisco, CA, May 24-28, 2007.

Wessler, H., **Skorek, M.**, Kleinen-von-Königslöw, K., Held, M., Dobрева, M., & Adolphsen, M. (2007). *Comparing media systems and media content: Online newspapers in ten Eastern and Western European countries.* Paper presented at the International Media and Communication Conference 'West meets East', Wrocław, Poland, April 23-25, 2007.

Poster Presentations

Skorek, M., Song, A. V., & Dunham, Y. (2011). *Mediators of the relationship between personality and body dissatisfaction.* Poster presented at the 91st Annual Convention of the Western Psychological Association, Los Angeles, CA, USA, April 28 - May 1, 2011.

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Skorek, M., & Dunham, Y. (2010). *Mirror, mirror on the wall, who is the thinnest of them all? Sexually suggestive TV commercials and their impact on self-esteem and body perception in women of different races.* Poster presented at the 11th Annual Conference of the Society for Personality and Social Psychology, Las Vegas, NV, January 28-30, 2010.

Skorek, M., & Dunham, Y. (2009). *Effect of short-term exposure to gender stereotypical magazine advertisements on implicit stereotyping and behavior.* Poster presented at the 30th Annual Central California Research Symposium, Fresno, CA, April 23, 2009.

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ABSTRACT OF THE DISSERTATION

**Effects of exposure to idealized body portrayals in an ethnically
diverse sample of men and women**

by

Małgorzata Skorek

Doctor of Philosophy in Psychological Sciences

University of California, Merced, 2011

Assistant Professor Yarrow Dunham, Chair

There is considerable support in the literature for the proposition that exposure to portrayals of idealized bodies in advertising has various negative effects on men's and women's self and body image. Yet, there is also evidence for self-enhancement effects of these advertisements. This disparity in findings suggests the possibility that not *all* men and women react to advertising portrayals in the same way and invites a careful study of potential moderators of exposure effects. The proposed research aimed to explore three types of moderators of media exposure which address limitations of prior work. First, we studied these effects in populations that were largely ignored before: men and ethnically diverse individuals (*demographic moderators*). Second, we investigated whether personality traits

might reveal important differences in men's and women's vulnerability to media exposure to idealized body portrayals (*personal moderator*). Third, we have attempted to explore subtler differences in the exposure effects by using new implicit methodology, enabling us to measure automatic processing of advertising content (*methodological moderator*). Using implicit measures as opposed to explicit measures is an important contribution because implicit measures are free from many of the limitations of self-reports. These contributions were investigated via four experimental and one correlational study. Results revealed that in some cases ethnic-minority men and women respond differently to idealized body portrayals in advertising than do White individuals. In accordance with prior work done almost exclusively in White samples, White men and women experienced negative effects of exposure on their self-esteem and body perception, whereas Asian and Hispanic (men only) individuals experienced self-enhancing effects, suggesting that these individuals engaged in a 'fantasy' rather than upward social comparisons. These findings have important health implications and may be helpful in designing targeted interventions and media campaigns focusing on ethnic-minority men and women suffering from eating disorders. Turning to personality, even though we found that personality traits (extraversion, conscientiousness, emotional stability) were closely related to self-esteem (directly) and body dissatisfaction (indirectly), we did not find a strong support for their moderating role. Finally, this dissertation provided some evidence that implicit measures record subtler differences in exposure effects as compared to explicit ones. In conclusion, we provided more support for self-enhancing effects than negative effects of exposure, which were revealed by incorporating moderating variables (demographic and methodological). Implications for future work in this area are highlighted and discussed.

Part I

Introduction

Chapter 1

Research motivation

*Good advertising does not just circulate information.
It penetrates the public mind with desires and belief.*

–Leo Burnett

*In our factory, we make lipstick.
In our advertising, we sell hope.*

–Peter Nivio Zarlenga

In today's Western world advertising is ubiquitous. On average, we are exposed to 70 television advertisements per day, amounting to approximately 25,500 over the average year (Desrochers and Holt, 2007). Thus, we rarely get to experience the 'joy of not being sold anything'. Because of the evident impact of advertising on our buying behavior, many of us might want to avoid it. However, only few are aware of the fact that advertising influences much more than our purchasing decisions. Research suggests that advertising shapes our health risk behaviors (Austin et al., 2006; Schooler et al., 1996), understanding of gender roles (Dietz, 1998; Hansen, 1989; Siegel, 1958), and even perception of our bodies and ourselves (Harrison, 2000; Myers and Biocca, 1992).

One of the best studied of these topics is the impact of viewing advertising portrayals of idealized bodies on viewers' self and body image. *Body image*

is a broad construct that relates to a person's perceptions, feelings, and thoughts about their body (Grogan, 2008). This construct has been operationalized in different ways, including appearance and body dissatisfaction (the evaluative aspect of body image), body concern and appearance anxiety (the affective aspect), as well as drive for thinness and muscularity (Kelley et al., 2010; Thompson et al., 1999). *Self image* refers to a person's perceptions, feelings, and thoughts about their self. This construct is closely related to self-esteem (i.e., positive or negative attitudes towards the self; Rosenberg, 1965) and feelings of self-worth (Fine et al., 1993). Body image can be considered one of the aspects of self image, next to emotional control, family relationships, morals, sexual attitudes, and the like (Offer and Howard, 1972). Moreover, body image can directly influence self image (Barlett et al., 2005) because men and women have been socialized to believe that appearance is an important basis for self-evaluation and for evaluation by others (Thompson et al., 1999).

There is a growing empirical support for the possibility that idealized portrayals of men and women in advertising have negative effects on viewers' self and body image. Over one hundred articles have now been published on this topic (Barlett et al., 2008; Grabe et al., 2008), most of them focusing on women, who are generally considered to be more dissatisfied with their bodies and thus more susceptible to media influence (van Hoeken et al., 1998). Experimental work provides evidence that even a few-minute exposure to idealized (i.e., thin and attractive) and often unrealistic body portrayals of women in advertising has immediate negative effects on women's self and body image. To give a few prominent examples, experimental studies showed that women exposed to media portrayals of idealized thinness experience increased body dissatisfaction (Ogden and Munday, 1996; Shaw, 1995), higher levels of depression (Heinberg and Thompson, 1995; Stice and Shaw, 1994), increased anxiety (Dittmar and Howard, 2004; Kalodner, 1997), and decreased self-esteem (Clay et al., 2005; Hawkins et al., 2004). Despite the majority of studies reporting negative effects of exposure, it is important to note that several experimental studies found that women exposed to idealized female portrayals experienced increased body satisfaction (Coolican, 1999), increased ap-

pearance self-esteem (Mills et al., 2002), and decreased levels of depression (Myers and Biocca, 1992). Meta-analytic work provides a valuable synthesis of these results, but has not reached entirely consistent conclusions. Groesz, Levine, and Murnen (2002) concluded that women's body image was significantly more negative after viewing images of thin and attractive models than after viewing average-size models, overweight models, or inanimate objects ($d = .31$ across 25 studies), while Holmstorm's (2004) meta-analysis reported that such models have little or no effect on viewers' body image ($r = .08$ across 34 studies). The most recent update (Grabe et al., 2008) included a much larger sample of published as well as unpublished work and found that across 77 studies exposure to mass media had a negative effect on women's body dissatisfaction ($d = .28$), internalization of the thin ideal ($d = .39$), and eating behaviors and beliefs ($d = .30$).

It is crucial to study the impact of advertising exposure on women's self and body image because it is directly related to women's physical and mental health. It is well known that adolescent girls and young women are often dissatisfied with their bodies and themselves (Anschutz et al., 2008a; Grabe and Hyde, 2006). This puts them at severe health risk due to the fact that body dissatisfaction strongly predicts the development of disordered eating (Harrison and Cantor, 1997) and depression (Johnson and Wardle, 2005). The most recent figures show that prevalence of eating disorders in the U.S. has doubled over the last four decades (Eating Disorders Coalition, 2006) and it has been estimated that more than 10 million American women are suffering from eating disorders (Hudson et al., 2007). Even the youngest women are at risk of falling into disordered eating: 80% of 10 year olds are afraid of being fat (Mellin et al., 1991) and more than half of teenage girls use unhealthy weight control behaviors (Neumark-Sztainer, 2005). Further, it has been estimated that 35% of dieting women will progress into pathological dieting and many of those are likely to develop eating disorders (Shisslak et al., 1995). While the development of eating disorders has a number of potential causes, research demonstrates that the role of mass media is particularly important (Levine and Murnen, 2009), with correlational studies revealing a reliable association between consumption of mass media that promote idealized body images and eating

disorder symptomatology (Bissell and Zhou, 2004; Botta, 2003; Harrison and Cantor, 1997; Stice et al., 1994; Tiggemann and Pickering, 1996). For instance, mere self-reported media exposure predicts greater levels of body dissatisfaction and disordered eating (Stice et al., 1994; Posavac et al., 1998). Experimental work cited above provides further support for the relationship between media exposure and body dissatisfaction and other symptoms related to the development of eating disorders.

What about men? Do they show similar negative effects of media exposure? While several dozen correlational and experimental studies have investigated women (Grabe et al., 2008), men have not received as much attention, with only about a third the number of studies on record (Barlett and Harris, 2008; Blond, 2008). This research disparity is troubling when we acknowledge that men are becoming increasingly dissatisfied with their bodies (Adams et al., 2005) and are increasingly suffering from eating disorders like anorexia nervosa or bulimia nervosa (Hoek, 2006; Hudson et al., 2007; Striegel-Moore et al., 2009). Moreover, some researchers consider homosexual men to be at a higher risk of eating disorders (Silberstein et al., 1989) partly due to gay culture's increased emphasis on physical appearance (Striegel-Moore and Bulik, 2007). A recent survey by Striegel-Moore et al. (2009) showed that while women reported more prevalence of certain symptoms of disordered eating (e.g., fasting, loss of control while eating), men reported equally high prevalence of excessive exercise and the use of laxatives, and significantly higher prevalence of overeating as compared to women. Due to the fact that mass media exposure is often associated with increased eating disorder symptomatology (Becker et al., 2002; Moriarty and Harrison, 2008; Tiggemann, 2003), investigations of mass media effects on men's self image are needed to understand factors increasing men's susceptibility to these effects.

Recent meta-analytic work (Barlett et al., 2008; Blond, 2008) suggests that viewing idealized male bodies in advertising has a small but statistically significant negative impact on men's body image ($-.19 \leq d \leq -.22$ across 25 studies; Barlett, Vowels, and Saucier, 2008 and $d = .43$ across 15 studies; Blond, 2008). To give a few specific examples, experimental work showed that viewing portrayals

of idealized (i.e., attractive and muscular) men in advertisements decreased men's self-esteem (Farquhar and Wasylkiw, 2007), body esteem (Grogan et al., 1996; Hobza et al., 2007), and body satisfaction (Hausenblas et al., 2003; Lorenzen et al., 2004), whereas it increased men's feelings of anxiety and depression (Agliata and Tantleff-Dunn, 2004; Halliwell et al., 2007). Viewing portrayals of idealized *women* also led to greater levels of anxiety (Johnson et al., 2007), greater actual-ideal body discrepancy (Lavine et al., 1999) and decreased body esteem (Dens et al., 2009) in men. By contrast, only one study found that exposure to idealized male portrayals can have self-enhancing effects by lowering men's negative affect (Halliwell et al., 2007). Just like in women, correlational research reported a relationship between men's consumption of idealized media messages and increased body dissatisfaction (Duggan and McCreary, 2004), drive for muscularity (Duggan and McCreary, 2004), and lowered self-esteem (Green and Pritchard, 2003).

1.1 Theoretical foundation

Taken together, the above findings demonstrate that advertising images presenting idealized models are harmful to men and women viewing them: A few minutes of exposure influence viewer's perceptions, emotions, and even eating behavior. Several theories can be used to explain what drives these negative effects. From a mass communication perspective, Gerbner (1969) argues that media 'cultivate' beliefs and attitudes and that people who view a lot of mass media messages are likely to believe that media reality is the only reality (Cultivation Theory; Gerbner, 1969). In the present context, this suggests that women and men who are often exposed to media portrayals of idealized beauty are likely to adopt this beauty ideal. They may then feel dissatisfied with themselves if they do not meet this ideal. Empirical work supports this theory by demonstrating that the overall amount of television viewing is a significant predictor of the drive for thinness and muscularity (Tiggemann, 2005), body ideals (Swami et al., 2010), as well as body dissatisfaction (Harrison and Cantor, 1997). However, some researchers argue (Tiggemann and Pickering, 1996) that exposure to only certain types of tele-

vision programming (e.g., music videos and soap operas as opposed to sports) is problematic for individual self and body image.

The Tripartite Influence model (Thompson et al., 1999) builds upon the previous theory and suggests that exposure to mass media is only one of the variables that form the basis for development of body image and eating dysfunction. Thompson and colleagues argue that peers, parents, and media are important factors influencing one's body image. Research shows that, for instance, peers' teasing increases women's body dissatisfaction (Thompson et al., 1995), as well as dieting and binge eating tendencies (Paxton et al., 1999). Pressure to be thin and teasing within family are also related to eating disturbances in women (Kanakakis and Thelen, 1995; Levine et al., 1994).

Social Comparison Theory (SCT, Festinger, 1954) offers a more specific explanation of the negative effects of exposure to media portrayals of the beauty ideal. This theory holds that individuals have a constant drive for self-evaluation, and this can primarily be accomplished by means of comparison with others. According to Festinger (1954) there are two types of comparisons: upward and downward. Upward comparisons involve those seen as superior to the self, and can lead to decline in self-esteem, depression, and anger. Downward comparisons involve those perceived as inferior to the self, and can lead to higher self-esteem and decreased anger (Festinger, 1954). Thus, SCT suggests that we could expect most men and women to evaluate themselves more negatively after viewing idealized images of advertising models due to an upward comparison with them. This is often referred to as a negative *contrast effect* (Mills et al., 2002; Wheeler, 1966). However, Wheeler (1966) argued that not all types of upward comparisons have to result in negative self-evaluation. In particular, for individuals who see themselves as close to an ideal, viewing highly attractive models may have an 'inspirational' (Collins, 1996) or 'fantasy' effect (Myers and Biocca, 1992) which will actually bolster self-esteem. I will call this family of proposed phenomena *self-enhancement effects*, in comparison with the *contrast effects* discussed above.

Fredrickson and Roberts (1997) proposed Objectification Theory which also attempts at explaining the negative effects of exposure to idealized bodies. This

theory asserts that repeated experiences of objectification result in women (or men) taking on an observer's perspective of their bodies. Thus, they treat their own bodies as objects to be looked at and evaluated by. This so called 'self-objectification' results in habitual monitoring of one's own body appearance, leading to negative psychological consequences including body dissatisfaction, body shame, and disordered eating (Fredrickson and Roberts, 1997; Fredrickson et al., 1998).

Finally, the Social Cognitive Theory of Mass Communication (Bandura, 1994) suggests that 'the fashion and taste industries rely heavily on the social prompting power of modeling' (Bandura, 2002, p. 138). Men and women in advertising are usually presented as physically beautiful, admired, happy, and successful in every domain of life. Drinking a certain brand of beverage or using a particular shampoo wins the admiration of other people, enhances physical and job performance, tranquilizes irritable nerves, and arouses affectionate overtures from spouses (Bandura, 2002). This theory asserts that when the following conditions are present: models are attractive, idealized, and receive rewards rather than punishment, individuals are likely to model the behaviors of these models (Bissell and Zhou, 2004). Therefore, it is reasonable to expect men and women who observe many rewards associated with being physically beautiful to want similar rewards for themselves and subsequently to model the behavior (and appearance) of advertising models.

In research discussed in this dissertation, the above theories, especially Social Comparison Theory, are often employed as a framework to generate specific predictions about the outcomes of exposure to media-portrayed beauty ideal (see Chapters 3, 4, 7, 8).

1.2 Current objectives

In what follows I will discuss four major limitations of prior work on effects of exposure to idealized bodies which motivated the research questions pursued in this dissertation. The first three research questions are more general and were investigated in most of the experimental studies reported in this dissertation, whereas

the last one is more specific and was examined only in the final portion of the dissertation. For an overview of details of studies included in the dissertation see Table 1.1.

Effects of exposure in men (RQ 1)

As mentioned above, the first limitation of the existing research is too little emphasis on studying men. Despite the overwhelming evidence of exposure effects on women's self image and eating behavior men have received little attention in this field (Barlett and Harris, 2008). According to the most recent meta-analyses, whereas 77 experimental and correlational studies investigated the effects of media exposure on body concern in women (Grabe et al., 2008) only 25 examined these effects in men (Barlett and Harris, 2008), one third of the total number of studies on women. This gender disparity in research would not be problematic in itself, if it did not imply that consequently some important questions are understudied in men. While research on women focuses on a variety of outcomes including body dissatisfaction and body image concern, internalization of a thinness ideal, eating behaviors and beliefs, studies conducted in men focused mostly on body dissatisfaction and body esteem (Agliata and Tantleff-Dunn, 2004; Baird and Grieve, 2006; Leit et al., 2002), ignoring the behavioral and psychological outcomes. A few such outcomes were studied in correlational research (Duggan and McCreary, 2004; Green and Pritchard, 2003) but not in experimental work. Whereas a large number of important moderating factors, like restraint or internalization of a body ideal, were identified in research on women (Anschutz et al., 2008a; Dittmar and Howard, 2004), very little is known about the role of these variables in men. Moreover, very few studies exist that directly compare the effects of exposure across gender (Dens et al., 2009; Grogan et al., 1996; Kalodner, 1997). Therefore, I would like to acknowledge that men are also affected by exposure to idealized body portrayals and will include them in this research, not only extending the current knowledge of the effects of exposure on men, but also directly comparing these effects across gender. Thus, the first research question is:

RQ₁: Do effects of media exposure to idealized bodies on self and body

image differ depending on gender?

I hypothesize that women will be slightly more negatively affected by exposure to idealized bodies than men (Hypothesis 1) due to the fact that women generally exhibit more body dissatisfaction than men (van Hoeken et al., 1998).

Effects of exposure in non-White participants (RQ 2)

An investigation of the effects of exposure to idealized bodies on men's and women's self and body image has been reported in more than one hundred studies, however, an overwhelming majority of them focus on effects found in White women (Grabe et al., 2008) or White men only. Consequently, very little is known about the effects of exposure in ethnic-minority men and women (Halliwell et al., 2007; Tiggemann and McGill, 2004). This is a serious limitation of this research field, because we cannot generalize its findings to all individuals. Alternatively, we may have ignored important differences in the way men and women of different ethnic backgrounds respond to advertising images.

Only three correlational and no experimental studies compared the effect of viewing idealized media portrayals of women on body dissatisfaction and related measures in women of different race/ethnicity (Bissell and Zhou, 2004; Borzekowski et al., 2000; Schooler et al., 2004). Borzekowski, Robinson, and Killen (2000) found that for White and African American women there was a positive correlation between watching music videos and perceived importance of appearance, whereas this relationship was not significant for Asian and Hispanic American women. Schooler, Ward, Merriwether, and Caruthers (2004) found that amount of mainstream media exposure predicted White women's poorer body image, while viewing African-American-oriented media was unrelated to their body image. In turn, viewing African-American-oriented media predicted a healthier body image of African American women, while mainstream media had no effect on their body image. The results reported by Bissel and Zhou (2004) showed that women who are frequently exposed to thinness-depicting media are more likely to be dissatisfied with their body; however, this relationship was stronger for White than non-White women. Four additional (mostly correlational) studies examined the effect of expo-

sure to thinness among single groups of ethnic-minority women: African American, Cuban American, and Fijian (Becker et al., 2002; Frisby, 2004; Jane et al., 1999; Zhang et al., 2009). No studies known to the author compared the impact of viewing idealized portrayal on men across race/ethnicity.

As I review in more detail in Chapters 3 and 4, this concern is particularly pressing in the present context because the literature suggests several reasons why non-White individuals might be affected differently by exposure to media portrayed body ideals. Culture and ethnicity often dictate different body ideals. For instance, as compared to White men African American men rate larger female silhouettes as attractive and desirable (Rosen et al., 1993; Thompson et al., 1996). African American men also prefer larger male bodies than do White men (Thompson et al., 1996), whereas Asian men are similar to White men in their desired body weight (Barr, 1995). Unfortunately, comparisons of body ideals across ethnicity in men are scarce. African American and White men are the most often compared groups, with much less known about body ideals in Asian and Hispanic Americans. Therefore, it is challenging to predict whether and how different ethnic groups differ in their reactions to idealized male bodies. It turns out that one can motivate several quite different predictions. Following SCT (Festinger, 1954) we might expect that men with larger body ideals might experience more of a discrepancy with media ideals and thus be more prone to negative exposure effects. If so, ethnic groups that tend towards larger body ideals would be more negatively affected; for instance, we would expect more negative exposure effects in Hispanic American or African American men as compared with Asian and White American men. But SCT can also motivate the contrary possibility as social comparisons are based on perceived similarity (Festinger, 1954). If ethnic minorities do not consider White models, which are predominant in advertising, to be a reference group, they might resist social comparison entirely, thereby sheltering themselves from the negative effects of such comparisons. Thus, while both of these possibilities lead to the expectation of ethnic differences in exposure effects, they differ in the predicted direction of difference.

In women the situation is similar. On the one hand, ethnic-minority women

(African American and Hispanic women in particular) tend to idealize larger body sizes than White women (Botta, 2000; Gil-Kashiwabara, 2002; Parnell et al., 1996; Powell and Kahn, 1995; Rucker and Cash, 1992) and so when comparing themselves to media models members of these groups might perceive a larger discrepancy between themselves and the media ideal, leading to greater dissatisfaction and more negative exposure effects. On the other hand, the portrayal of particularly thin and mostly White models may not match the internalized ideal held by ethnic-minority women, on which logic they would be less likely to directly compare themselves to media models, and so would feel less threatened by them (Warren et al., 2005). Indeed, prior research suggests that only Asian American women were found to endorse mainstream beauty ideals in a similar fashion to White women (Evans and McConnell, 2003; Kawamura, 2002) and would thus be likely to suffer from exposure to idealized thin portrayals to a similar extent.

Based on the above, I suggest that race/ethnicity might be an important moderator of the effects of exposure to idealized bodies in both men and women. The literature can support a prediction of *greater* or *lesser* media exposure effects in ethnic-minority women. As I noted above, evidence remains limited, though correlational research provides some evidence that the results of exposure to media messages differ for women with different ethnic background (Bissell and Zhou, 2004; Borzekowski et al., 2000; Schooler et al., 2004). However, correlational research cannot establish a causal relationship between media exposure and its effects, and an experimental investigation may provide a clearer picture of the connection between media exposure, its effects, and race/ethnicity. Therefore, in this dissertation I will try to answer the following research question:

RQ₂: Do effects of media exposure to idealized bodies on self and body image differ depending on race/ethnicity?

Based on the arguments above, I hypothesize that exposure effects will differ according to women's and men's race/ethnicity (Hypothesis 2).

Overcoming the limits of self-report measures (RQ 3)

The third drawback of the previous research is its over-reliance on self-report measures which suffer from several limitations. First, participants do not always give truthful answers, as they may want to hide responses that are socially undesirable. This may be especially true for socially charged, personal, and potentially embarrassing issues, like those relating to body dissatisfaction and self-evaluation. Second, even if motivation to tell the truth is high, certain information may not be available to participants' introspection because it is stored in semantic memory in a format that is not consciously accessible (Greenwald and Banaji, 1995). Such information necessitates the use of 'implicit' measures of automatic processing (e.g., Stroop Task; Stroop, 1935, or Implicit Association Test; Greenwald, McGhee, and Schwartz, 1998). Therefore, a combination of both explicit and implicit measures of media exposure effects is needed in order to reveal a potentially more reliable pattern of results. One of the most notable successes in this area is research on intergroup prejudice, which now routinely focuses on subtle, introspectively unidentified biases, such as negative affective responses to racial outgroups (Devine, 1989; Dovidio et al., 2002). Despite being unknown to the participant and not necessarily consistent with their explicit (i.e., self-reported) attitudes, these implicit forms of bias reliably predict behavior, often to a greater extent than do their self-reported counterparts (e.g., Greenwald, Poehlman, Uhlmann, & Banaji, 2009). This approach of combining both explicit and implicit measures has also made an impact in clinical (Teachman and Brownell, 2001; Teachman et al., 2010) and health-related settings (Hofmann et al., 2008; Wiers et al., 2010). For instance, implicit methods are used as proxies for impulsive behavior and are often included in predictive models of health-related behavior (Hofmann et al., 2008). Implicit measures have also been utilized in the study of narcissism. Studies have shown that narcissists do not evaluate themselves uniformly positively across all dimensions; they tend to have high explicit self-esteem which masks their low implicit self-esteem (Campbell et al., 2007; Zeiger-Hill, 2005).

This coexistence of two types of self-evaluation is consistent with the model of dual attitudes proposed by Wilson, Lindsey, and Schooler (2000). This model

suggests that people can simultaneously hold two different attitudes towards the same object (e.g., the self) - one at a deliberative, explicit level and the other at an automatic, implicit level. These dual attitudes can develop when an attitude change occurs; a new explicit attitude is formed but the older attitude may persist in memory and continue to affect behavior at an implicit level (see also Smith & DeCoster, 2000). Dual attitudes can also result from simultaneous acquisition of an explicit or implicit attitude or from an acquisition of an implicit attitude after an explicit one has been formed (Wilson et al., 2000). Implicit attitudes are considered to be of an unknown origin (i.e., people are unaware of the basis of their evaluation), are activated automatically, and influence implicit (i.e., uncontrollable) responses (Greenwald and Banaji, 1995). It is not clear, however, whether implicit attitudes are unconscious. Some theorists define them as such (Bosson et al., 2000; Farnham et al., 1999) but there is no clear evidence for this assumption and some researchers argue that implicit attitudes may be a preconscious cognitive structure and they can sometimes enter awareness (Wilson et al., 2000). For instance, implicit attitudes can guide conscious responses when individuals are cognitively busy (Koole et al., 2001) and awareness may be experienced as an inconsistency within the self (Jordan et al., 2003).

No study so far has evaluated the effect of viewing media images using implicit measures. In particular, I attempt to demonstrate that some effects of media exposure only appear when subtler measurement techniques (implicit methods) are employed. Thus, this dissertation will attempt to answer the following research question:

RQ₃: Do effects of exposure to idealized bodies on self and body image differ depending on the use of implicit or explicit measures?

We expect that implicit measures will reveal stronger effects of media exposure on participants' self and body image than do explicit measures (Hypothesis 3). Implicit measures should indicate media influence more reliably due to more access to automatic processing and reduced demand in the implicit task. A detailed discussion of the advantages of using implicit methods in the study of self-esteem (Chapters 3 and 4) and body esteem (Chapters 7 and 8) can be found below.

The role of personality traits (RQ 4)

Literature on the effects of exposure to idealized body portrayals on women's self and body image is quite extensive and I reviewed all personal moderators studied previously (see Chapter 2). This review was aimed at identifying women that are at the highest risk of suffering from the negative effects of idealized media portrayals, as well as facilitating future research designs by encouraging researchers to include the most important moderators in their analyses. After an in-depth review, I realized that one very crucial potential moderator of exposure effects received virtually no attention, that is personality traits. It was a very surprising finding due to the fact that personality traits, especially neuroticism and extraversion, are known to predict individual levels of body dissatisfaction and self-esteem, and therefore they are likely to interact with the effects of exposure on participants' self and body image. At the time of writing the review (Chapter 2) and the beginning of this dissertation no study on the effects of exposure to idealized bodies on self and body image has included personality as one of the potential moderators. We considered several reasons why personality traits should be taken into consideration in this research. Individuals high in neuroticism are more emotionally reactive to social comparisons and threatening stimuli (Rusting, 1998) and generally more negative towards themselves and their appearance (Eysenck, 1990; Kvaalem et al., 2006). Therefore, they are likely to get more upset or over-react during an unpleasant experience like viewing several images of idealized beauty which may be unattainable for them. By contrast, extraverted individuals are generally more outgoing, confident, and positive in affect (Watson and Clark, 1997) leading to more positive self-evaluations (Kvaalem et al., 2006). Therefore, they are less likely to experience negative effects of exposure and may even react positively. Instead of feeling threatened, they may experience an inspirational effect (Collins, 1996). Therefore, I posed the following research question:

RQ₄: Do personality traits, neuroticism and extraversion in particular, moderate the effects of media exposure to idealized body portrayals on self and body image?

This question is critical if an ultimate goal is identification of vulnerable populations (i.e., men and women most susceptible to suffering from media exposure) as well as development of subsequent intervention to help these vulnerable individuals shelter themselves from negative exposure effects. I expect that at least two personality traits, neuroticism and extraversion, will distinguish between participants who are more (individuals high on neuroticism) and less (highly extraverted individuals) vulnerable to the negative effects evoked by exposure to idealized portrayals (Hypothesis 4). The investigation of the remaining Big-Five personality traits (conscientiousness, openness, agreeableness; McCrae and Costa, 1999) will have an exploratory character. Two experimental studies were published very recently and confirmed that neuroticism moderates the effect of exposure to idealized images of women on body dissatisfaction and body esteem, with more neurotic women experiencing higher levels of body dissatisfaction and lower body esteem after exposure (Dalley et al., 2009; Roberts and Good, 2010). These articles did not, however, investigate the remaining personality traits that this dissertation will study.

Further moderators. Several other potential moderators, including internalization of sociocultural ideals, comparison tendency, or body mass index (BMI), will be included as potential moderators in addition to personality traits in subsequent studies. Yet, since these variables have been already investigated in prior work, they are not considered to be the major contributions of the current work.

Thus, the major aim of this dissertation is *to explore variables that moderate the effects of exposure to idealized body portrayals and to study these effects using implicit methodology*. In other words, I wish to better understand who reacts to media portrayals and why, and to characterize any observable differences across populations.

Figure 1.1 presents major contributions and research questions of studies reported in this dissertation. As shown in this Figure, the research questions asked in this dissertation correspond to two demographic (gender, race/ethnicity), one personal (personality), and one methodological (implicit and explicit measures)

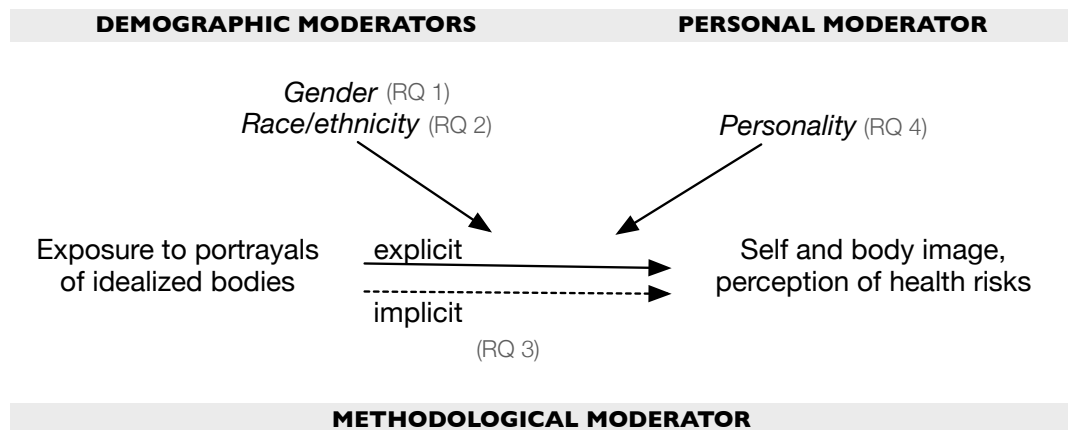


Figure 1.1: Overview of the major contributions of the dissertation.

moderator. However, we consider the inclusion of implicit methodology to be much more than just another moderator. For the investigation of media effects using implicit methods offers access to a theoretically interesting psychological phenomenon that is automatic processing of advertising. I elaborate on this more in Chapters 3 and 4.

1.3 Overview of the dissertation

The Introduction (Part I) is followed by a chapter reviewing personal moderators of the effects of exposure to thinness in women investigated in earlier experimental work (Chapter 2, Part II). As discussed above, there is substantial evidence that exposure to idealized media portrayals of women has negative effects on women’s self and body image. One limitation of this research is an assumption that *all* women react to these portrayals in the same way. In fact, a growing body of research suggests that there is substantial variation in the extent to which an individual is susceptible to these effects. For instance, the way women react to advertising exposure may depend on personal differences including their initial body dissatisfaction, body mass, or even relationship status (we call these individual difference variables ‘personal moderators’). This article reviews 43 ex-

perimental studies involving 16 personal moderators (Skorek and Dunham, under review-c). The primary aim of this review was to identify personal moderators with most empirical support which helped identify groups of women that are at the highest risk of experiencing negative media effects: women with body image disturbance, women who have internalized the thin-beauty ideal, and those conscious about being evaluated by others. The reason for the inclusion of studies on the effects in women only stems from the fact that very few articles exist exploring personal moderators in men. The secondary aim of this work was to include these strongest moderators in future studies as reliable moderating or mediating variables. Internalization of sociocultural ideals and comparison tendency were among the most supported moderators of exposure and were subsequently included in research reported in this dissertation (see Chapters 6, 7, 8). Finally, this in-depth review helped identify an important variable that received no empirical attention and was thus included as one of the research questions in this dissertation, that is, personality traits (RQ 4).

Part III contains a report of two experimental studies which investigated the implicit and explicit effects of exposure to advertising-portrayed idealized male and female bodies in an ethnically diverse sample of women (Chapter 3, $N = 202$) and men (Chapter 4, $N = 160$). Participants in these two studies viewed advertisements from three different exposure conditions. Their implicit self-esteem was measured using the Implicit Association Test (IAT; Greenwald, McGhee, and Schwartz, 1998), and a questionnaire assessed their actual-ideal body discrepancy, explicit self-esteem, and perception of weight-related health-risks. The primary contribution and the central research question of both of these studies was whether effects of exposure to portrayals of idealized bodies differ across race/ethnicity (RQ 2). The second important contribution was the investigation of these effects using both explicit and implicit measures of self-esteem to reveal whether implicit methods might reveal more subtle effects of exposure that explicit measures cannot (RQ 3). We found that exposure had self-enhancing effects on men's self-esteem and actual-ideal body discrepancy (Skorek and Dunham, 2011a; Skorek and Dunham, 2011b; Skorek and Dunham, under review-b), but no such results were reported

for women (Skorek and Dunham, 2010a; Skorek and Dunham, 2010b; Skorek and Dunham, under review-a). Moreover, these results differed by race/ethnicity in men only but contrary to our expectation all women reacted uniformly to media exposure. Lastly, the study in men showed a greater sensitivity of implicit versus explicit measures, which suggests the utility of moving beyond self-report measures, which suffer from limitations relating to task demands.

Having studied the first three research questions in two experimental studies (Chapters 3 and 4) in Part II, in Part IV we moved towards a closer investigation of the 4th research question, that is, the role of personality in moderating the effects of exposure to idealized body portrayals. First, we conducted a correlational pilot study (Chapter 5, $N = 212$ women and $N = 175$ men) investigating the relationships between personality traits and a range of self and body image related measures. Participants completed items measuring personality, self-esteem, body dissatisfaction, body esteem, comparison tendency, and internalization of sociocultural ideals. This study was motivated by the idea that if personality correlates with body dissatisfaction, body esteem, or similar measures, it will be worth including this variable as a moderator in following experimental studies. We found that several personality traits (extraversion, emotional stability, conscientiousness) were in fact associated with self and body image measures. Gender differences are also discussed. The study reported in Chapter 6 was based on the same data as in Chapter 5 and was aimed at investigating the relationship between all five personality and body dissatisfaction in more depth. In this chapter, we explored individual differences in men's and women's body dissatisfaction by investigating the relationship between personality traits and body dissatisfaction. Contrary to prior work, which suggested a *direct* relationship between personality and body dissatisfaction, we hypothesized that it is mediated by self-esteem. In addition, we expected the relationship between self-esteem and body dissatisfaction to be mediated by internalization of sociocultural ideals. Path analysis was used to test the predictive and mediational role of self-esteem. Results confirmed the hypothesized model; self-esteem mediated the relationship between personality (emotional stability, extraversion, conscientiousness) and body dissatisfaction in both men and

women (Skorek et al., 2011; Skorek et al., under review). Internalization of socio-cultural ideals was an additional mediator of the relationship between self-esteem and body dissatisfaction in women.

Both correlational studies confirmed that personality matters for one's self and body image. Consequently, in a subsequent experimental investigation of exposure effects on women's body image we included personality traits as a potential moderating variable (Chapter 7). In particular, we hypothesized that emotional stability and extraversion would moderate the effects of exposure. We have also included comparison tendency and body mass index (BMI) in this study as further potential moderators as they received a good deal of support in prior work (Chapter 2). The study reported in this chapter investigated the effects of exposure to idealized female bodies on implicit body perception and body esteem ($N = 185$ women and $N = 72$ men). Participants viewed two advertising exposure conditions and then a questionnaire assessed their comparison tendency, body esteem, and actual-ideal body discrepancy. Implicit body perception was measured using an IAT. This was more of an exploratory study and it included body image rather than self-esteem as the dependent variables, in contrast to the studies reported in Chapters 3 and 4. Against our expectation, we did not find that the level of extraversion or emotional stability interacted with exposure effects. We did find, however, a moderation effect by comparison tendency and BMI. Detailed results including gender effects as well as study limitations are discussed.

In Part V, we reported a final experimental study which was meant to extend and replicate findings from prior experiments (Chapter 8). The major innovation of this study was a two-factor experimental design with one between-subjects (two exposure conditions) and one within-subjects factor (pretest and posttest scores). All previous experiments had only a between-subjects factor (Chapters 3, 4, 7); see Table 1.1 presenting an overview of all studies included in the dissertation. Having a within-subjects factor offered a valuable opportunity to distinguish between individuals who may be differently affected by advertising exposure. We were unable to investigate this distinction in prior designs with only posttest scores. Apart from moderators included in the dissertation research

questions, in this study we included several additional potential variables that may influence the extent of media exposure effects on women: body weight (BMI), comparison tendency, internalization of sociocultural ideals, media exposure, and socioeconomic status (SES). In Part 1 of this experiment, participants ($N = 192$ women) filled out a questionnaire assessing their explicit self-esteem, body esteem, actual-ideal body discrepancy, and the above mentioned moderators. Implicit self-esteem and body perception were measured using two IATs. Participants returned to the lab 7 days after Part 1 and viewed one of two advertising conditions followed by a questionnaire assessing the dependent measures and participated in two IATs (same as in Part 1). As expected, the results of the study did not reveal any main effects of advertising exposure, but we identified a few moderators of exposure to idealized body portrayals on women's self and body perception. Advertising exposure had a different effect on women's implicit body perception depending on their race/ethnicity. Moreover, conscientiousness and comparison tendency moderated the effects of exposure on women's explicit self-esteem.

Conclusions, limitations of this work, and future directions follow in the last part of the dissertation (Part VI).

Table 1.1: Overview of studies included in the dissertation.

Chapter	Goal	N	Exposure	Type of control	Moderators (IVs)	Implicit DVs	Explicit DVs
3*	RQs 1),2),3)	202 W	Idealized women (16 TV ads)	Cars (16 TV ads), No ads	Race/ethnicity, implicit-explicit methods	Self-esteem (IAT)	Self-esteem (FT, RSES, LS), actual-ideal body discrepancy (PBIS), perception of health risks (2 items)
4*	RQs 1),2),3)	160 M	Idealized women (16 TV ads), Idealized men (16 TV ads)	No ads	Race/ethnicity, implicit-explicit methods	Self-esteem (IAT)	Self-esteem (FT, RSES, LS), actual-ideal body discrepancy (PBIS), perception of health risks (2 items)
5***		212 W 175 M	-	-	Gender, race/ethnicity	-	Body dissatisfaction (EDI-BD, BSQ), body esteem (BES), actual-ideal body discrepancy (PBIS), self-esteem (RSES), personality (TIPI)
6***		212 W 175 M	-	-	Gender, race/ethnicity	-	Body dissatisfaction (EDI-BD), self-esteem (RSES), personality (TIPI)
7*	RQs 1),2),3),4)	185 W 72 M	Idealized women (6 TV ads)	Cars (6 TV ads)	Gender, race/ethnicity, implicit-explicit methods, personality, BMI, comparison tendency	Body perception (IAT)	Body esteem (BES)
8**	RQs 2),3),4)	192 W	Idealized women (8 TV ads)	Cars (8 TV ads)	Gender, race/ethnicity, implicit-explicit methods, personality, BMI, SES, comparison tendency, internalization of ideals, media exposure	Self-esteem (IAT), body perception (IAT)	Self-esteem (FT, RSES, LS), body esteem (BES), actual-ideal body discrepancy (PBIS)

Note. *experiment (between-subjects), **experiment (2 factors: one between-subjects and one within-subjects), ***correlational study, M - men, W - women, IVs - independent variables, DVs - dependent variables.

Continued on the next page

1.1: Overview of studies included in the dissertation.

Study	Goal	N	Exposure	Type of control	Moderators (IVs)	Implicit DVs	Explicit DVs
BSQ - Body Shape Questionnaire (Cooper et al., 1987); BES - Body Esteem Scale (Franzoi and Shields, 1984); BMI - Body Mass Index; EDI-BD - Body Dissatisfaction subscale of the Eating Disorder Inventory (Garner et al., 1983); FT - Feeling Thermometer; IAT - Implicit Association Test (Greenwald et al., 1998); LS - Likert-like scale of self-esteem (Greenwald et al., 2002); PBIS - Pictorial Body Image Scale (Stunkard et al., 1983); RSES - Rosenberg Self-Esteem Scale (Rosenberg, 1965); SES - socioeconomic Status; TIPI - Ten-Item Personality Inventory (Gosling et al., 2003)							

Part II

Literature review

Chapter 2

Who is harmed by media portrayed thinness? A review of personal moderators

2.1 Introduction

As reviewed in the Introduction, several randomized experiments and correlational studies have demonstrated adverse effects of viewing idealized portrayals of thin advertising models on women's self and body image.¹ However, the broader literature is also populated by a rather large number of studies that failed to demonstrate this same pattern. For example, null results have been found for the effects of thin media portrayals on women's body-focused anxiety (Halliwell et al., 2005), self- and body esteem (Irving, 1990), body satisfaction (Champion and Furnham, 1999), self-perceptions of physical attractiveness (Martin and Kennedy,

¹Several prior studies were concerned about health implications of exposure to idealized media portrayals of women, and hence, they often refer to the 'thin' portrayals as opposed to 'thin and attractive' portrayals I have focused on in the Introduction. In my view, referring to 'thinness' only is rather simplistic because almost all studies use real advertisements as their stimulus and it is impossible to control for attractiveness when selecting thin models. Therefore, in the overwhelming majority of studies the concepts of thinness and attractiveness are confounded and it is not clear whether the effects of exposure are brought about by advertising models being thin, thin and attractive, or only attractive. See more discussion on this topic in Chapters 3 and 4. Nevertheless, to reflect the style of prior work cited in this review I decided for the references to thinness only.

1993), and dieting behavior (Thornton and Maurice, 1997). In addition, a few studies have found effects in the opposite direction: exposure to thin media portrayals of women has been found to decrease women's body dissatisfaction (Coolican, 1999; Cusumano and Thompson, 1997) and level of depression (Myers and Biocca, 1992). While it is of course possible that such results reflect insufficient statistical power or sampling variation, these dramatically mixed findings can also be taken to suggest that media effects are not as straightforward or universal as might have been assumed. Indeed, challenging the underlying assumption that *all* women respond to thin body portrayals in the same way, there is a growing number of studies showing that personal differences like women's initial body satisfaction or weight moderate women's reactions to media portrayals. Thus, it is possible that the complexity in the overall pattern of results in this area is the result of insufficient attention to these moderating factors.

In this article, we review experimental research that did not assume that all women react to idealized thinness in advertising in the same way and that thus explored personal differences ('personal moderators') moderating the effects of viewing ideal images on women's body image and concern. A comprehensive review of this research has not yet been published, leaving the role of these moderators in some doubt. Thus, the central aim of this review is to lend clarity to the disparate findings on the effects of exposure to media-portrayed thinness by identifying and categorizing the personal moderators that most conclusively underlie this variation. This will serve two primary purposes. First, the identification of important personal differences will give insight into which women are in fact vulnerable to mass media influences and which women are not, potentially supporting more targeted research, including interventions to ameliorate the negative consequences of media exposure. Second, highlighting the measures that can most fruitfully be included in study design provides a more practical benefit. A challenge for interpreting research in this area has been the large number of conceptually related yet methodologically distinct measures that have been employed. We hope to increase clarity by placing these diverse measures into meaningful clusters, thereby increasing confidence that we have successfully identified the most

meaningful moderators. One drawback of a descriptive style of this review is that we cannot assess the strength of the moderators statistically. Quantitative methods, for instance a meta-analysis, would allow for better conclusions about the effectiveness of particular moderators. However, in many cases this approach is impractical given the small number of available studies employing each moderator and the range of dependent variables employed (see Table 2.2). As research continues in this area, this may soon become a viable approach. We focused on exposure effects on women's self and body image only due to the fact that insufficient research exists on variables moderating effects of exposure in men.

In what follows, we briefly review methodological and demographic factors which may moderate media exposure effects. We then turn to a more detailed review of 16 personal moderators, introducing first those with the most consistent empirical support. Finally, we discuss the implication of this review's findings for future research.

2.1.1 Methodological and demographic moderators

Moderating variables can be classified as methodological (e.g., stimulus type, study design, dependent measures), demographic (e.g., age, gender, race/ethnicity) and personal (e.g., differences in individuals' attitudes or behaviors). Existing meta-analyses (Grabe et al., 2008; Groesz et al., 2002; Holmstorm, 2004; Want, 2009) have focused almost exclusively on the first two types of moderators. For example, in a meta-analysis of media effects on body image concern, Grabe et al. (2008) reported significant differences in the magnitude of effect sizes as a function of age, media type, and publication status.

A few single studies further investigated the moderating role of methodological variables like type of instruction (e.g., encouraging comparison to the media models, Cattarin, Thompson, Thomas, and Williams, 2000; or including hints about the true purpose of the study, Mills, Polivy, and Herman, 2002), model characteristics (Crouch and Degelman, 1998; Dens et al., 2009), and exposure duration (Brown and Dittmar, 2005; Joshi et al., 2004), generally finding that explicit comparison prompts, as well as thin media models, as opposed to average-looking

or overweight models, resulted in more negative effects of exposure. Duration was not found to have any effect.

Turning to demographic moderators, multiple studies have addressed the role of age (Botta, 2003; Champion and Furnham, 1999; Groesz et al., 2002; Martin and Kennedy, 1993), but evidence for moderation based on this factor remains mixed (Dittmar and Howard, 2004; Halliwell et al., 2005). Considerable attention has also been paid to gender differences in the effects of exposure to idealized media portrayals (Botta, 2003; Jones, 2001; McCabe and Ricciardelli, 2003; Ricciardelli and McCabe, 2001; Vartanian et al., 2001), but the majority of studies investigating these differences are correlational. The few experimental studies that have directly compared men's and women's susceptibility to media images have reported similar effects in both men and women (Barlett and Harris, 2008; Grogan et al., 1996; Ogden and Munday, 1996), though one study (Kalodner, 1997) found that women were negatively affected by exposure to media images while men were not. Because of the paucity of experimental work with male participants, it will be necessary to restrict our review of personal moderators to studies involving women.

All in all, substantial attention has been paid to identifying methodological and demographic moderators, but there has yet to be a comprehensive review of personal moderators. We now turn to a detailed overview of all personal moderators found in experimental studies of the effects of media on body concerns of women.

2.2 Method

The sample of studies was retrieved from PsycINFO database (keywords used in searches included 'body', 'media', 'image', 'eating', 'dissatisfaction', 'advertising', 'moderator') and from reference lists of meta-analyses (Grabe et al., 2008; Groesz et al., 2002; Holmstorm, 2004; Want, 2009) and single research articles. Articles identified by this search were then reviewed by the first author for the presence of an examined moderator of media exposure effects. This procedure yielded a total of 37 articles (43 experimental studies) involving 16 moderators

and a total sample size of approximately 4,800 female participants. The search was completed in 2009. All studies are English-language publications predominantly on research conducted with European-American women.

2.3 Personal moderators - categorization

Researchers have identified and tested a number of personal moderators of the effects of thin portrayals on women's body concern. They reflect important differences in women's vulnerability to the adverse effects of media images. Table 2.1 presents a grouping of all moderators into seven categories.

Table 2.1: Overview of all personal moderators investigated in the literature.

<i>Category</i>	<i>Personal moderators</i>
Moderators with strongest support	
Body image disturbance	1) Body dissatisfaction (4/5)* 2) Cognitive body image disturbance (1/1) 3) Body image self-discrepancy (1/1)
Attitudes towards a beauty ideal	4) Appearance schematicity (4/5) 5) Internalization of the thinness ideal (8/10) 6) Thinness attainability belief (1/1)
Self-objectification tendency	7) Self-objectification (1/2) 8) Public self-consciousness (2/2)
Moderators with less support	
Eating behavior	9) Restraint status (5/8) 10) Disordered eating (3/6)
Self-perception cognitions	11) Comparison tendency (0/2) 12) Self-monitoring (0/1)
Objective body size	13) Weight (2/5)
Gender attitudes and stereotypes	14) Feminist attitudes (0/1) 15) Gender stereotyping endorsement (1/1)
External factors	16) Relationships status (1/1)
*Number of studies that found a significant relationship out of the total number of studies that investigated the impact of a given moderator.	

The first set of studied moderators is related to women's internal perception of their outer appearance: their body image (Cash, 1990b; Thompson et al., 1999), and in particular, body image disturbances, defined as distortions of body image (Bruch, 1962). These disturbances can take many forms including affective, cognitive, perceptive, and behavioral distortions (Thompson et al., 1999). In particular, we identified work focusing on the affective (body dissatisfaction), cognitive (cognitive body image disturbance), and perceptual (actual-ideal body discrepancy) aspects of body image disturbance. The second set of studies investigated women's attitudes and perception of a beauty ideal. Participants in

various studies were asked to report how important appearance is for them ('appearance schematicity'; Labarge, Cash, and Brown, 1998), their internalization of a beauty ideal, and their belief in the attainability of that ideal. The third group of studies tested the moderation effect of women's tendency to see themselves as objects evaluated by others, referred to as 'self-objectification' (Fredrickson and Roberts, 1997) or 'public self-consciousness' (Buss, 1980). The fourth group dealt with women's eating behavior as a potential moderator of their vulnerability to the negative media effects. Researchers specifically studied dietary restraint and eating disorders symptomatology, both of which could be considered behavioral consequences of body image disturbance. The fifth set of studies focused on women's self-perception cognitions. We included in this category the extent to which women compare their appearance to the appearance of others ('social comparison tendency'), and the extent to which women are sensitive to the appearance and behavior of others and their tendency to use these cues as a guideline for managing their own self-presentations ('self-monitoring'; Snyder and DeBono, 1985). Body Mass Index (BMI) was often tested as a moderator and we included it in the sixth category - objective body size. The next moderators were feminist attitudes and the endorsement of gender stereotyping, both included in the category of gender attitudes and stereotypes. Finally, research tested one external factor relationship status. All of the above mentioned moderators and constructs will be defined in more detail below. We will focus on the general pattern of results of reviewed studies, but methodological descriptives of the cited research can be found in Table 2.2. As our goal is to illuminate broad patterns rather than isolated results, we place particular emphasis on moderators that have been confirmed in multiple studies by multiple investigators.

Table 2.2: Personal moderators of the effect of exposure to thinness on women's body concern.

Study	N	Mean age	Moderator	Determined by	Image type	Type of control	Dependent Measure(s)
Dispositional body image disturbance							
Champion & Furnham (1999)	203	12-16	<i>Body dissatisfaction*</i>	BSQ	Thin models	Oversize models/ Products only	Body satisfaction (VAS)
King et al. (2000)	96	20.1	Body dissatisfaction	BSQ	Thin celebrity	Heavy celebrity	'True figure' judgments
Posavac et al. (1998)							
<i>Study 1</i>	136	18-25	Body dissatisfaction	EDI-BD	Thin models	Cars	Weight concern (BES-WC)
<i>Study 2</i>	181	18-25	Body dissatisfaction	EDI-BD	Thin models	Cars/ Average models	Weight concern (BES-WC)
<i>Study 3</i>	53	18-25	Body dissatisfaction	EDI-BD	Thin models	Cars	Weight concern (BES-WC)
Heinberg & Thompson (1995)	139	18-48	Cognitive body image disturbance	BCDS-PA	Thin models	Products only	Mood, body satisfaction (VAS)
Bessenoff (2006)	112	18.68	Actual-ideal body discrepancy	PBIS	Thin models	Products (men not women)	Mood, self-esteem (VAS), body satisfaction (EDI-BD), depression (ATQ)
Attitudes/perception of a beauty ideal							
Hargreaves & Tiggemann (2002)	135	15.8	Appearance schematicity	ASI	Thin models	Products only (some men)	Mood, body satisfaction (VAS)
Hargreaves & Tiggemann (2003)	160	14	<i>Appearance schematicity</i>	ASI	Thin models	Products only (some men)	Body satisfaction (VAS)
Hargreaves & Tiggemann (2004)	310	14.3	Appearance schematicity (incl. soc. comparison)	ASI	Thin models	Products only (some men)	Mood, body satisfaction (VAS), appearance comparison (SAC)
Ip & Jarry (2008)	95	-	Appearance schematicity	ASI	Thin models	Products only	Body satisfaction (BISS, BIQ), self-esteem (CTS, RSES), affect (PASTAS)
Henderson-King et al.	117	19	Appearance schematicity	1 item	Thin models	Products	Body esteem (BES),

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2.2: Personal moderators of the effect of exposure to thinness on women's body concern

Study	N	Mean age	Moderator	Determined by	Image type	Type of control	Dependent Measure(s)
(2001)							
Anschutz et al. (2009)	110	20.1	<i>Internalization of an ideal</i>	SATAQ	Thin models	Average models/ neutral ads	self-esteem (RSES), current attractiveness Mood (VAS), anxiety (PASTAS), food intake
Brown & Dittmar (2005)	75	21.23	Internalization of an ideal	SATAQ	Thin models	Products only	Anxiety (PASTAS), schema activation (WCT)
Cattarin et al. (2000)	180	22.97	Internalization of an ideal	SATAQ	Thin models	Average models	Mood, body satisfaction (VAS)
Dittmar & Howard (2004)	150	32.7	Internalization of an ideal	SATAQ	Thin models	Average models/ Products only	Anxiety (PASTAS)
Dittmar et al. (2009)							
<i>Study 1</i>	87	26.6	Internalization of an ideal	SATAQ	Thin models	Products only	Anxiety (PASTAS)
<i>Study 2</i>	155	26.0	Internalization of an ideal	SATAQ	Thin models	Products only	Anxiety (PASTAS)
Halliwell & Dittmar (2004)	202	30.8	Internalization of an ideal	SATAQ	Thin models	Average models/ Products only	Anxiety (PASTAS)
Heinberg & Thompson (1995)	139	18-48	Internalization of an ideal	SATAQ	Thin models	Products only	Mood, body satisfaction (VAS)
Thornton & Maurice (1997)	176	20.8	<i>Internalization of an ideal</i>	IOA	Thin models	No images	Social self-esteem (TSBI), self-consciousness (SCS), body satisfaction (EDI-BD), eating disorders (EDI-DT/B), anxiety (SPAS)
Yamamiya et al. (2005)	123	21.4	Internalization of an ideal	SATAQ-3	Thin models	Cars	Body dissatisfaction (BISS)
Mills et al. (2002)							
<i>Study 2</i>	61	19.72	Thinness attainability belief	Manipulation (reading)	Thin models	Products only	Mood (ARS), food intake, state self-esteem (CTS), body perception (BSP)
Self-objectification tendency							
Hamilton et al. (2007)	81	20.27	<i>Self-objectification</i>	OBC	Thin models	Products only	Body esteem (BES)
Monro & Huon (2006)	72	15-37	Self-objectification	SOQ	Thin models	Products only	Food intake

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2.2: Personal moderators of the effect of exposure to thinness on women's body concern

Study	N	Mean age	Moderator	Determined by	Image type	Type of control	Dependent Measure(s)
Thornton & Maurice (1999)							
<i>Study 1</i>	138	20.6	Public self-consciousness (trait)	SCS	Thin models	Products only	Anxiety (SPAS), physical attractiveness (PAQ), self-esteem (TSBI)
<i>Study 2</i>	57	20.8	Public self-awareness (state)	Manipulation (mirror)	Thin models	Products only	Anxiety (SPAS), physical attractiveness (PAQ), self-esteem (TSBI)
Eating behavior							
Dittmar & Blayney (1996)	31	-	Disordered eating	EAT	Thin models (food ad)	Thin models (non-food)	Emotions (bipolar scales)
Hamilton & Waller (1993)	48	ca.26	Disordered eating	DSM	Thin models	Home interiors	Body perception (BPI)
Hawkins et al. (2004)	145	20.2	<i>Disordered eating</i>	ABI	Thin models	Products only	Body satisfaction (EDI), negative affect (POMS), self-esteem (RSES), internalization (SATAQ)
Irving (1990)	162	-	<i>Disordered eating</i>	BULIT	Thin models	Average models/ Overweight/None	State self-esteem (BAT), body esteem (BES), pressure to be thin
Pinhas et al. (1999)	118	20	Disordered eating	EDI	Thin models	Products only	Mood (POMS), body satisfaction (BPSS)
Roccio (1995)	76	21.8	<i>Disordered eating</i>	EAT BULIT	Thin models	Products only	Self-esteem (RSES), body attitudes (MBSRQ), body size estimation, body satisfaction
Anschutz, Engels, et al. (2008)	104	20.8	Restraint status	DEBQ-R	Thin models	Stretched models	Mood (VAS), body satisfaction (EDI-BD), food intake
Anschutz, van Strien, et al.	118	21.8	Restraint status	DEBQ-R	Thin models	Products only	Mood (VAS, PANAS), food intake

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2.2: Personal moderators of the effect of exposure to thinness on women's body concern

Study	N	Mean age	Moderator	Determined by	Image type	Type of control	Dependent Measure(s)
(2008)					(diet products)	(non-diet)	food intake
Anschutz et al. (2009)	110	20.1	<i>Restraint status</i>	DEBQ-R	Thin models	Average models/ neutral ads	Mood (VAS), anxiety (PASTAS), food intake
Joshi et al. (2004)	92	20.25	Restraint status	RS	Thin models	Products only	Mood (ARS), self image (SIS), state self-esteem (CTS)
Mills et al. (2002)							
<i>Study 1</i>	98	19.72	Restraint status	RS	Thin models	Overweight models Products only	Mood (ARS), food intake, state self-esteem (CTS), body perception (BSP)
Monro & Huon (2006)	72	15-37	<i>Restraint status</i>	RS	Thin models	Products only	Food intake
Ogden & Munday (1996)	20	19-25	<i>Restraint status</i>	DEBQ-R	Thin models	Overweight models	Body satisfaction (VAS), body size estimation
Seddon & Berry (1996)	74	25.6	Restraint status	RS	Thin models	Average models	State self-esteem (SSES), food intake
Self-perception cognitions							
Cattarin et al. (2000)	180	22.97	<i>Comparison tendency</i>	Manipulation (instruction)	Thin models	Average models	Mood, body satisfaction (VAS)
(2005)						Products only	
Dittmar & Howard (2004)	150	32.7	<i>Comparison tendency</i>	CMS	Thin models	Average models/ Products only	Anxiety (PASTAS)
Henderson-King & Henderson-King (1997)	87	19	<i>Self-monitoring</i>	SMS	Thin models	Products only	Body esteem (BES)
Objective body size							
Barlett & Harris (2005)	32	18.94	<i>Weight (BMI)</i>	Self-reported	Muscular action figure	Less muscular action figure	Body esteem (BES, BSQ)
Brown & Dittmar (2005)	75	21.2	Weight (BMI)	Self-reported	Thin models	Products only	Anxiety (PASTAS), schema activation (WCT)
Halliwell et al.	76	30.8	<i>Weight (BMI)</i>	Measured	Thin models	Average models/ Products only	Anxiety (PASTAS)

Continued on the next page

2.2: Personal moderators of the effect of exposure to thinness on women's body concern

Study	N	Mean age	Moderator	Determined by	Image type	Type of control	Dependent Measure(s)
(2005)						Products only	
Hamilton et al. (2007)	81	20.27	<i>Weight (BMI)</i>	Self-reported	Thin models	Products only	Body esteem (BES)
Henderson-King & Henderson-King (1997)	87	19	Weight	Self-reported	Thin models	Products only	Body esteem (BES)
Gender attitudes & stereotypes							
Lavine et al. (1999)	57	18-35	<i>Feminist attitudes</i>	ATWS, AI, FA	Thin models	Average models	Body image (PBIS)
Roccio (1995)	76	21.8	Gender stereotyping endorsement	SRS; TESR	Thin models	Products only	Self-esteem (RSES), body attitudes (MBSRQ), body size estimation body satisfaction
External factors							
Lin & Kulik (2002)	67	20	Relationship status	Self-reported	Thin comparison peer	Oversize/ no peer	Anxiety (STAI), body satisfaction (BPSS), self-esteem (RSES)

N - no. of women in the sample

* - italic font indicates that a study failed to find a significant moderation effect of the exposure to media-portrayed thinness on any of the dependent measures

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2.2: Personal moderators of the effect of exposure to thinness on women's body concern

Study	N	Mean age	Moderator	Determined by	Image type	Type of control	Dependent Measure(s)
ABI - Anorexia Bulimia Inventory (Stein, 1991); AI - Attitudinal Inventory (Smith and Self, 1981); ARS - Affect Rating Scale (Atkinson and Polivy, 1976); ASI - Appearance Schemas Inventory (Cash and Labarge, 1996); ATQ - Automatic Thoughts Questionnaire (Hollon and Kendall, 1980); ATWS - Attitudes Towards Women Scale (Spence and Helmreich, 1978); BAT - Bipolar Adjective Test (Ickes et al., 1973); BCDS-PA - Physical Appearance subscale of the Bulimia Cognitive Distortions Scale (Schulman et al., 1986); BES - Body Esteem Scale (Franzoi and Shields, 1984); BES-WC - Weight Concern subscale of BES; BIQ - Body Image Ideals Questionnaire (Cash and Szymanski, 1995); BISS - Body Image States Scale (Cash, 2002); BPI - Body Perception Index (Slade and Russell, 1973); BPSS - Body Parts Satisfaction Scale (Berscheid et al., 1973); BSP - Body Size Perception (Fallon and Rozin, 1985); BSQ - Body Shape Questionnaire (Cooper et al., 1987); BULIT - Bulimia Test (Smith and Thelen, 1984); CMS - Comparison to Models Survey (Strowman, 1999); CTS - The Current Thoughts Scale (Heatherton and Polivy, 1991); DEBQ-R - Restraint subscale of the Dutch Eating Behaviour Questionnaire (van Strien et al., 1986); DSM - Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric Association (apa, 1987); EAT - The Eating Attitudes Test (Garner et al., 1982); EDI - Eating Disorder Inventory (Garner, 1991); EDI-BD - Body Dissatisfaction subscale of EDI; EDI-DT/B - Drive for Thinness and Bulimia subscales of EDI; FA - Feminist Attitudes scale (Renzetti, 1987); IOA - Importance of Appearance scale (Timko et al., 1987); MBSRQ - Multidimensional Body Self Relations Questionnaire (Cash, 1990); MBSRQ-AE - Appearance Evaluation subscale of MBSRQ; OBC - Objectified Body Consciousness Scale (McKinley and Hyde, 1996); PAQ - Physical Attractiveness Questionnaire (Thornton and Moore, 1993); PASTAS - Physical Appearance State and Trait Anxiety Scale (Reed et al., 1991); PBIS - Pictorial Body Image Scale (Stunkard et al., 1983); POMS - Profile of Mood States (McNair et al., 1971); RS - Restraint Scale (Herman and Polivy, 1980); RSES - Rosenberg Self Esteem Scale (Rosenberg, 1965); SAC - State Appearance Comparison (Tiggemann and McGill, 2004); SATAQ - Sociocultural Attitudes Towards Appearance Questionnaire (Heinberg et al., 1995); SATAQ-3 - a more recent version of SATAQ (Thompson et al., 2004); SCS - Self-consciousness Scale (Fenigstein et al., 1975); SIS - Self Image Scale (McFarlane et al., 1998); SRS - Sex Role Stereotyping (Burt, 1980); SMS - Self Monitoring Scale (Snyder and Gangestad, 1986); SOQ - Self-Objectification Questionnaire (Fredrickson et al., 1998); SPAS - Social Physique Anxiety Scale (Hart et al., 1989); SSES - State Self-Esteem Scale (Heatherton and Polivy, 1991); STAI - State Trait Anxiety Inventory (Spielberger et al., 1983); TESR - Traditional Egalitarian Sex Roles (Larson and Long, 1988); TSBI - Texas Social Behavior Inventory (Helmreich et al., 1974); VAS - Visual Analogue Scale; WCT - Word-stem completion task							

2.4 Personal moderators with strongest support

2.4.1 Body image disturbance

Body dissatisfaction

The affective component of body image disturbance is thought to involve distress and anxiety (Thompson et al., 1999). ‘Body dissatisfaction’ is thus conceptualized as an important global measure of distress ‘because it captures the essence of one’s subjective evaluation’ (Thompson et al., 1999, p. 9).

Aspects of body dissatisfaction have been the only personal difference moderator addressed by meta-analytic reviews. Groesz et al. (2002) established that prevalence of body issues was a moderator of women’s vulnerability to the adverse effects of media images on their body concern. The effect size for women who experienced significant body issues was moderate ($d = 0.50$); for those who did not, it was much smaller ($d = 0.10$) (Groesz et al., 2002). Similarly, Want (2009) confirmed that pre-existing appearance concerns significantly moderated media effects; participants with higher levels of appearance concerns were generally more negatively affected by media exposure. However, the moderators studied by these two meta-analyses were based on broad categories that combined seemingly independent constructs into one factor. Groesz et al. (2002) included women with high initial body dissatisfaction with women recruited from eating disorder clinics. Want (2009) subsumed under a single factor measures of appearance dissatisfaction, drive for thinness, public self-consciousness, restrained eating, and adherence to appearance ideals. Therefore, while these findings are highly suggestive, they fail to provide a detailed view of which factors played the largest moderating role. Indeed, several of the variables included in these broad categories of ‘body issues’ and ‘appearance concerns’ are likely to be independent constructs in need of independent assessment (for example, body dissatisfaction versus public self-consciousness or eating behavior). Thus, to more closely examine these potential moderators, we will turn to the individual studies.

Posavac, Posavac, and Posavac (1998) argued that variation in women’s level of body satisfaction moderates their vulnerability to the adverse effects of

mass media images. Specifically, women who are consistently satisfied with their bodies are likely to find idealized media images of women less threatening (Posavac et al., 1998), and thus are less concerned about their weight following media exposure. The authors offer two arguments in favor of this position. First, high-satisfaction women's body shape may not be markedly different from models, such that social comparisons with models will be more likely to invoke self-enhancement rather than negative contrast (see Collins, 1996). Second, body weight may not be a major determinant of some women's self-worth, for example because they gain their confidence from other arenas such as their skills and abilities. We might add a third possibility: women may perceive a discrepancy between their own and the ideal body but remain satisfied with their own body image because they are both relatively satisfied with their own bodies and aware of the fact that media models are unrealistic.

Experimental work provided satisfactory support for these contentions. After viewing the images of thin models, women dissatisfied with their bodies reported more weight concern than after viewing control images or images of average women, while no such differences were found for satisfied women (Posavac et al., 1998). Moreover, dissatisfied women judged female celebrities to be thinner than in reality, whereas satisfied women showed no such bias (King et al., 2000). One study by Champion and Furnham (1999) focused on teen-aged girls, and provided more mixed support for the moderating role of body dissatisfaction. They found that viewing images of overweight as compared with thin models caused those who were satisfied with their body to think less about their own weight and those who were dissatisfied with their body to think more about their own weight. However, this relationship appeared on only one of seven dependent measures, raising the possibility that it represents an instance of type I error.

All in all, the results of the above experimental studies as well as from the meta-analyses (Groesz et al., 2002; Want, 2009) suggest that media have a negative effect only for women who already have some measure of body dissatisfaction.

Cognitive body image disturbance

Heinberg and Thompson (1995) were the only researchers who focused on the cognitive aspect of body image disturbance, that is, cognitive distortions related to one's physical appearance. These distortions were measured by asking female participants to indicate their agreement with statements like 'My value as a person is related to my weight', and 'If my clothes do not fit perfectly everyone will notice' (Schulman et al., 1986). Heinberg and Thompson (1995) found that women with high levels of cognitive body image disturbance showed an increase in appearance dissatisfaction after viewing thin models in commercials, while individuals with lower levels showed a decrease in appearance dissatisfaction. After viewing neutral ads all participants reported improved appearance satisfaction. These results suggest that women with high levels of cognitive body image disturbance are particularly susceptible to the adverse effects of media images of thinness.

Body image self-discrepancy

Body image self-discrepancy is another concept related directly to body image disturbance. Self-discrepancies are defined as representations in one's self-concept of ways in which some important standards are not met (Higgins, 1987; Higgins, 1989). The presence of such representations has been linked to various types of emotional distress (Higgins, 1989). Body image self-discrepancy is a specific example of a self-discrepancy referring to a dissatisfaction and disappointment with one's body. Cash and Szymanski (1995) argued that women may not only compare themselves to superior others, as suggested by Festinger's (1954) SCT, but that they also compare their actual self-concept to an internalized ideal. Discrepancy between the perceived self and internalized ideal would then lead to greater dissatisfaction and negative feelings (Thompson, 1990).

Supporting this model, women with high levels of body image discrepancy who viewed advertisements with thin models reported greater dejection- and agitation-related mood, higher levels of depression and lower self-esteem than high-discrepancy women who viewed control advertisements (Bessenoff, 2006). This

suggests that idealized media models can activate actual-ideal body discrepancy, leading to these negative outcomes. Similar to the study by Posavac et al. (1998) there was no effect of exposure for women with a low level of body image discrepancy.

2.4.2 Attitudes towards a beauty ideal

Appearance schematicity

Schema theory offers another explanation for why some women may be more vulnerable to the effects of media exposure than others (Hargreaves and Tiggemann, 2002). ‘Appearance-schematic’ individuals (Labarge et al., 1998) place great importance on appearance, and pay a lot of attention to appearance-related aspects of presented material, which may in turn lead to more adverse consequences of media exposure. Previously investigated moderators, like body dissatisfaction or cognitive body distortions, may be conceptualized as indicative of a woman’s individual level of appearance schematicity (Hargreaves and Tiggemann, 2002). Individual differences in the level of appearance schematicity are usually determined by a questionnaire that measures beliefs and assumptions about the importance of appearance in one’s life (e.g., Cash and Labarge, 1996).

There is mixed support for appearance schematicity being a moderator of media effects on mood and body dissatisfaction. One study found that after exposure to thinness images women with a high level of appearance schematicity reported higher body dissatisfaction, while the level of body dissatisfaction of aschematic women did not differ depending on exposure condition (Hargreaves and Tiggemann, 2002). Appearance schematicity did not moderate exposure effects on women’s mood (Hargreaves and Tiggemann, 2002). A further experiment by these authors used a very similar overall design but did not find the same moderating effect of appearance schematicity on commercials’ effect on body dissatisfaction (Hargreaves and Tiggemann, 2003). In a more recent investigation, Hargreaves and Tiggemann (2004) combined appearance schematicity and trait social comparison into one moderator called ‘appearance investment’. It was found that women high on appearance investment engaged in more appearance comparisons

with the commercials than women with low investment, and this effect was larger for women who viewed thinness-emphasizing than control ads (Hargreaves and Tiggemann, 2004). Appearance investment, however, did not moderate the effect of exposure on body dissatisfaction. Ip and Jerry (2008) used two dimensions of appearance schematicity, self-evaluative salience (the extent to which self-concept and self-worth are based on physical appearance) and motivational salience (the individuals efforts directed at improving ones appearance) (Cash et al., 2004), and found that even though women high on both these dimensions reported lower appearance self-esteem after thinness exposure, only women with high self-evaluative salience reported greater body dissatisfaction and importance of body discrepancies.

In summary, there is some evidence that importance of appearance (i.e., appearance schematicity) might lead women to experience more negative effects of exposure to thinness, yet not all studies managed to confirm this. The three studies by Hargreaves and Tiggemann (2002, 2003, 2004) used slightly younger and older adolescents in the respective studies (see Table 2.2), whereas Ip and Jerry (2008) used college women, but these discrepant findings do not seem to follow a clear developmental pattern and remain difficult to explain.

Internalization of the thinness ideal

Several researchers expected that the effect of images of thinness might be amplified for women who internalize the thinness ideal more (Dittmar and Howard, 2004; Yamamiya et al., 2005). Women who internalize the thinness ideal are more likely to use thin and attractive models as upward comparison targets (Heinberg and Thompson, 1992) and may therefore feel inferior and dissatisfied after exposure to such media images due to not meeting the desired ideal. It is important, however, to draw a distinction between internalization of the ideal and awareness of its existence (Dittmar and Howard, 2004). The majority of women may be aware of the cultural beauty ideal but probably not all of them are internalizing it to the same extent. The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ), developed and validated by Heinberg, Thomson, and Stormer

(1995), contains independent subscales for awareness and internalization, and several studies have demonstrated that internalization correlates more strongly with body image disturbance than mere awareness does (Cusumano and Thompson, 1997; Heinberg and Thompson, 1995). The moderating effects of different levels of internalization of an ideal were tested in a number of experimental studies.

Following exposure to images of thinness, women who highly internalize the beauty ideal reported significantly higher levels of anger (Cattarin et al., 2000; Heinberg and Thompson, 1995), depression (Heinberg and Thompson, 1995), increased appearance dissatisfaction (Cattarin et al., 2000), less favorable body image states (Yamamiya et al., 2005), and higher body-focused anxiety (Brown and Dittmar, 2005; Dittmar and Howard, 2004; Dittmar et al., 2009; Halliwell et al., 2005). No exposure effects were found for women who do not internalize the beauty ideal to a high extent (Cattarin et al., 2000; Dittmar and Howard, 2004; Halliwell et al., 2005; Heinberg and Thompson, 1995; Yamamiya et al., 2005).

However, a few studies failed to find a moderating effect of internalization of a thin ideal. Women with both high and low level of adherence to an ideal, who viewed thin models, showed similar patterns of food consumption, mood (Anschutz et al., 2009; van Strien et al., 1986), social self-esteem (Thornton and Maurice, 1997), anxiety (Anschutz et al., 2009; Cattarin et al., 2000; Heinberg and Thompson, 1995; Thornton and Maurice, 1997), depression (Cattarin et al., 2000), body dissatisfaction (Heinberg and Thompson, 1995; Thornton and Maurice, 1997), self-consciousness, and eating disorders potential (Thornton and Maurice, 1997).

The studies reviewed above showed consistent evidence that, as compared to their low internalization counterparts, women who highly internalize the thinness ideal report a number of adverse outcomes when exposed to thin mass media images, including increased anger and body-focused anxiety. However, even though the majority of the studies demonstrated the moderating role of internalization, support for a few outcomes, like depression and body dissatisfaction, is clearly mixed. Therefore it seems like the effects of exposure to media-portrayed thinness is amplified on some but not all outcome measures.

Thinness attainability belief

Mills et al. (2002) manipulated dieting women's belief in attainability of their body ideal. They hypothesized that those women who strongly believe they can achieve their goal will experience a heightened self-enhancement after viewing idealized ads, while those who see their beauty ideal as unattainable will instead experience a negative contrast effect. In this experiment, women read either a high-attainability article (arguing that thinness is attainable through diet and exercise) or a low-attainability article (arguing that thinness is determined genetically), or a neutral article. The study revealed that within the thin-body condition high-attainability dieters were significantly less anxious and marginally less upset than low-attainability dieters. No significant results were found for depression and hostility. Mills et al. (2002) also showed that high-attainability dieters who viewed thin-body ads had higher state self-esteem than dieters who were in the low-attainability condition. Overall, the results for participants in the neutral-article condition replicated the first experiment by Mills et al. (2002) containing no attainability manipulation; exposure to thin body ideals led to self-enhancement expressed through body image ratings and appearance self-esteem but not affect or state self-esteem. The study of dieting women who viewed thin models under conditions of high or low thinness-attainability beliefs revealed that not only self-perception, but also affect and state self-esteem were influenced by mass media images.

2.4.3 Self-objectification tendency

Objectification theory (Fredrickson and Roberts, 1997) suggests that because women are socialized to see themselves as objects others look at and evaluate, they often experience anxiety or even shame when they do not meet cultural standards of beauty (Hamilton et al., 2007). The standard measurement of self-objectification involves the degree to which a woman experiences her body from an observer's perspective, the degree of feeling of shame for not meeting the cultural beauty standards, and the degree to which a woman feels in control of her weight (Hamilton et al., 2007; McKinley and Hyde, 1996). A concept closely related

to self-objectification is public self-consciousness (Buss, 1980), which refers to a concern with one's self as an object of other people's attention. It is associated with greater attention or responsiveness to standards or expectations by which one's appearance or behavior may be evaluated by others (Thornton and Maurice, 1999). Private self-consciousness, on the other hand, reflects attention to one's own thoughts, feelings, and motives (Buss, 1980). Previous research considered public self-consciousness to be a result of a contrast effect stemming from social comparisons with superior others (Thornton and Moore, 1993). It was hypothesized that women's self-objectification as well as public self-consciousness might predict changes in body image after exposure to portrayal of idealized thinness (Hamilton et al., 2007; Thornton and Moore, 1993). Specifically, it was predicted that women with high levels of self-objectification and/or public self-consciousness would be more responsive to contrast effects involving physical attractiveness.

Self-objectification

Experimental work tested the above hypothesis on a number of outcome measures. As compared to women low in self-objectification, women high in self-objectification who viewed mass media images of thinness consumed more food (Monro and Huon, 2006). The relationship was reversed when women viewed control ads; the amount of food consumed by those high in self-objectification was less than the amount consumed by low self-objectifiers (Monro and Huon, 2006). By contrast, a study by E. A. Hamilton et al. (2007) found that all women reported significantly decreased body esteem after exposure to thin images as compared to neutral images, regardless of their level of self-objectification.

Public self-consciousness

Women with high public self-consciousness who viewed thin advertising models reported lower physical attractiveness and self-esteem, and higher social physique anxiety as compared to women who viewed control images (Thornton and Maurice, 1999). This moderation effect was absent for women with low self-consciousness. A slightly different pattern of results was found in a study

that manipulated public self-awareness, a transient, induced state of public self-consciousness (Thornton and Maurice, 1999). High public self-awareness was achieved by placing a mirror in the laboratory room where women participated in the study. Self-aware women exposed to thinness images reported lower physical attractiveness, increased social physique anxiety and increased self-esteem as compared to women in the control condition (Thornton and Maurice, 1999). No differences across conditions were found for women low in public self-awareness.

These findings suggest that self-objectification is an important moderator of the effects of viewing media thinness. Moreover, they also showed that self-objectification is related to eating restraint. The study by Monro and Huon (2006) showed that viewing idealized images encouraged more food intake among high, but not low, self-objectification women, which supports self-enhancement theory (Mills et al., 2002), suggesting that as a result of media exposure women imagine themselves in an ideal body and consequently may engage in disinhibited eating.

2.5 Personal moderators with less support

2.5.1 Eating behavior

Restraint status

The tendency to restrain eating, that is dieting behavior, could be seen as a behavioral consequence of women's body image disturbance (Thompson et al., 1999). The reason why restrained eaters might respond differently to idealized media images is because weight and body shape are more relevant to them and because dieting is an attempt to bring their body to an ideal (Mills et al., 2002). Heatherton and Polivy (1992) suggested that dieters evaluate themselves negatively when confronted with a slim body image. This leads them to engage in a series of diets that spiral into increased body dissatisfaction, decreased self-esteem and susceptibility to overeating. By contrast, self-enhancement theory would imply that viewing images of thin models may have an inspirational effect on restraining women, because they may imagine themselves in an ideal body and as a result

may allow themselves to engage in disinhibited eating.

A number of studies found support for the self-enhancement theory and showed that, following exposure to thin models as opposed to control images, restrained eaters consumed significantly more sweet food (Anschutz et al., 2008a; Mills et al., 2002; Seddon and Berry, 1996), had higher appearance self-esteem (Mills et al., 2002) and social self-esteem (Joshi et al., 2004), smaller actual and ideal body size (Mills et al., 2002), more positive self image (Joshi et al., 2004), and less body dissatisfaction (Anschutz et al., 2008a). In unrestrained eaters, on the contrary, there were no significant effects of exposure found (Joshi et al., 2004; Mills et al., 2002). Restraint did not, however, moderate the effects of exposure on state self-esteem (Joshi et al., 2004; Seddon and Berry, 1996) or mood (Joshi et al., 2004).

Three additional studies failed to find a moderating effect of restraint status in a study of the effects of idealized images on food consumption (Anschutz et al., 2009; Monro and Huon, 2006), mood, anxiety (Anschutz et al., 2009), body size estimation, and body satisfaction (Ogden and Munday, 1996), though this final result has to be treated with caution as it was based on a very small sample of twenty women.

About half of the above studies found that restrained eaters engage in disinhibited eating after exposure to idealized mass media portrayals. However, exposure to thin advertisements did not make dieting women feel worse about themselves, and in some cases even boosted their appearance self-esteem. Dieters seemed to have imagined themselves as being thinner than usual after viewing ads with thin models, which let them eat more and feel better about themselves. This positive shift in self-perception following exposure to media portrayed beauty ideals suggests that mass media effects on eating behavior are more complex than proposed previously (e.g., Stice and Shaw, 1994). However, the experiments reported above investigated only very short-term effects of exposure to thinness. They tell us, therefore, only the beginning of the story. For example, no study has yet looked at the results of disinhibited eating on subsequent eating behavior. It is not unlikely that in highly restrained eaters feelings of guilt or shame may appear

after an episode of disinhibition, which could lead to further dieting and other compensatory behaviors. Also interesting is the fact that the disinhibited eating effect is present only when thinness is embedded in ads of non-dieting products; explicit references to dieting in ads of diet products serve as reminders and instead increase inhibition in restrained women. Thus, dieting-relevant information appears to prevent the self-enhancement effect.

Disordered eating

It has been hypothesized that women suffering from eating disorders may be more sensitive to images of thinness in the media. Irving (1990) expected that women exhibiting high levels of bulimic symptoms would be more susceptible to the esteem-deflating effects of thinness portrayal than women with few or no signs of eating disorders. His rationale was that women suffering from disordered eating tend to evaluate their bodies more negatively than women without eating disorders, because their body image is most likely more negative to begin with. However, a number of experimental studies failed to confirm this hypothesis, as all women reported lower self and body esteem (Irving, 1990), decreased body satisfaction, and negative affect and self-esteem (Hawkins et al., 2004; Rocchio, 1995) after viewing thin images regardless of their level of disordered eating symptoms.

Nevertheless, further research provided some evidence that women suffering from eating disorders did react differently to media portrayals than women without eating issues. Women suffering from eating disorders, like anorexia nervosa or bulimia nervosa, over-estimated their body size to a greater extent when they viewed thin models than when they viewed control advertisements (Hamilton and Waller, 1993). Women without these disorders were not affected by the stimulus and over-estimated their bodies to a similar extent in both exposure conditions. It was also found that compared to women with few or no indicators of eating disorders, women who self-reported more disordered eating symptoms responded with greater anger to the slides of thin models (Pinhas et al., 1999), and reported stronger negative emotions after viewing thin models in food versus non-food commercials (Dittmar and Blayney, 1996). These results suggest that women suffering

from eating disorders may be more susceptible to the negative effects of media-portrayed beauty; however, the above studies are not unanimous.

2.5.2 Self-perception cognitions

Social comparison

Dittmar and Howard (2004) investigated the role of personal differences in women's tendency toward appearance-related comparisons with same-sex models. Following SCT, the majority of women are likely to engage in upward comparison to models seen as superior to them (Festinger, 1954). These types of comparisons were found to often result in increased emotional distress and decreased self-esteem (Major et al., 1991). Therefore, the authors expected that women with a stronger comparison tendency would experience more negative effects of media messages. This hypothesis was disconfirmed, as women with both weak and strong comparison tendencies reported more anxiety after viewing thin models than when viewing control images, average-size women or products only (Dittmar and Howard, 2004). A similar finding was provided in an experiment in which researchers manipulated the comparison tendency by giving participants different instructions before viewing images of thin models (Cattarin et al., 2000). Increased social comparison failed to moderate media effects on women's depression, anger or anxiety.

Dittmar and Howard (2004) conducted an additional analysis, with the inclusion of internalization of a thin ideal as a second moderator, which revealed a significant 3-way interaction, suggesting that comparison tendency does affect the impact of exposure on anxiety but in different ways depending on thin-ideal internalization. Negative reactions to thin images were found to be conditional on internalization only, whereas high internalization undermined the positive effects of exposure to average-size models when combined with social comparison. Thus, social comparison tendency was not found to be a moderator by itself, but rather depended on the further effect of internalization of an ideal. One interpretation of this result is that internalization is a more proximal moderator and a more specific predictor of women's anxiety than more general social comparison tendency (Dittmar and Howard, 2004). Evidence of this more complex interactive

relationship may help to understand why some areas have reported mixed findings; simpler bivariate relationships might be masked by more complex relationships or unmeasured additional moderators.

Self-monitoring

People tend to engage to different extents in self-monitoring (Snyder, 1974). Those with high self-monitoring tendencies are more concerned with self-presentation, while low self-monitors are more concerned that their behavior in social situations be congruent with their values and dispositions (Snyder and DeBono, 1985). Because high self-monitors are concerned about the ways they are perceived by others, they could be expected to be less satisfied with their bodies than low self-monitors (Snyder and DeBono, 1985). In addition, because low self-monitors are less concerned about impressing others through appearance they may be more resistant to the adverse effects of advertising on body esteem and related concepts.

Henderson-King and Henderson-King (1997) investigated the moderating role of self-monitoring and found that, after viewing advertisements featuring thin models, high self-monitors were marginally more positive about their physical condition than low self-monitors. The study did not reveal any further significant interactions of self-monitoring and the remaining two aspects of body esteem assessed: sexual attractiveness and weight concern. This finding is inconsistent with the hypotheses put forward by Snyder and DeBono (1985), that high self-monitors would be negatively influenced by image exposure, but it supports the earlier mentioned self-enhancement theory stating that images of idealized women may enhance women's body esteem through an inspirational effect (Collins, 1996; Mills et al., 2002).

2.5.3 Objective body size

Weight

As mentioned above, viewing media portrayals of beauty may result in different levels of body dissatisfaction in women having different body sizes. Images

containing advertising models highlight the social ideal of slenderness, and women are likely to compare themselves upwardly to this ideal. Heavier women are likely to perceive a larger discrepancy between the self and the ideal and therefore may be more dissatisfied with their bodies than thinner women, who are closer to the ideal (Collins, 1996; Henderson-King and Henderson-King, 1997). Moreover, one could expect that whereas heavier women's more negative self-evaluations would result from contrast effects, thinner women's self-evaluations might be a result of self-enhancement. This is due to the fact that heavier women are likely to compare themselves downwardly to the advertising models (Festinger, 1954), while thinner women who are close to the thin ideal might imagine themselves in their ideal body through an inspirational effect (Collins, 1996).

Empirical support for the expectation that heavier women might be more negatively affected by exposure to thinness is mixed. Henderson-King and Henderson-King (1997)(Henderson-King and Henderson-King, 1997) showed that, when exposed to images of thin models, thinner participants evaluated their sexual attractiveness more positively whereas heavier women reported more negative self-evaluations. Participants' weight, however, failed to moderate the effects of exposure on the two other aspects of women's body esteem measured: weight concern and physical condition. Brown and Dittmar (2005) found that heavier women reported more weight-related anxiety following exposure than thin women, but participant's weight did not moderate effects of exposure on appearance schema activation.

Three additional experiments failed to show that participant's body mass was a moderator of the effects of exposure to thin models on women's body-focused anxiety (Halliwell and Dittmar, 2004), and body esteem (Barlett et al., 2005; Hamilton et al., 2007). Overall, the majority of evidence suggests that women's weight does not moderate most of the effects of exposure to thinness images. We suggest that objective weight might not matter as much as how women conceptualize their weight; objective weight may be a correlate of other psychological processes like body dissatisfaction or internalization of the thin ideal, and its role as a moderator is likely via its relationship with these psychological constructs.

2.5.4 Gender attitudes and stereotypes

Feminist attitudes

Correlational research revealed that feminism moderates the relationship between media awareness and thin-ideal internalization (Myers and Crowther, 2007). Women with more feminist attitudes were found to internalize the thinness ideal to a lower extent than their less feminist counterparts. This suggested that feminist attitudes might have a protective role on the impact of thin media images (Myers and Crowther, 2007). Other research showed that women with feminist attitudes towards gender are more likely than women with traditional attitudes to be aware of sexism in advertisements (Henderson-King and Stewart, 1994) and to reject these stimuli (Jensen and Gutek, 1982; LaFrance and Woodzicka, 1997), which again might protect women from negative media influences.

Experimental work, however, showed that feminist attitudes did not moderate the effects of exposure to thinness on women's body satisfaction (Lavine et al., 1999). This suggests that feminists and non-feminists are affected by the thinness portrayals in the same way, and that feminist attitudes are not necessarily a protective mechanism. Thus, while feminism may affect other media and body-related attitudes, it does not appear to directly protect against media exposure effects.

Gender stereotypes endorsement

Rocchio (1995) expected that women who hold more traditional and stereotypical views about men's and women's relationships are most likely to compare themselves unfavorably to advertising models and are therefore more vulnerable to the impact of thinness and attractiveness portrayals than women who do not endorse such stereotypes. Rocchio (1995) confirmed this hypothesis by reporting that women's attitudes towards their bodies were more negatively impacted by exposure to thin models for women with greater endorsement of gender stereotyping. However, as this conclusion is based solely on this one study, we interpret it with some caution here.

2.5.5 External factors

Relationship status

Having a boyfriend was suggested to mitigate the possible negative reactions to upward social comparisons (Lin and Kulik, 2002). This hypothesis was tested in a scenario in which women expected to be evaluated by an attractive man who was supposed to pick either them or their thin peer for a date (Lin and Kulik, 2002). Women who already had a boyfriend were expected to be less concerned with making positive impressions on the potential dating partner, whereas single women were expected to be more threatened by a possibility of a negative evaluation, but only if the peer woman was presented as thin and attractive. According to Leary, Haupt, Strausser, and Chokel (1998), the prospect of negative interpersonal evaluations can lead to a negative affective response, because such evaluations imply a possible exclusion or deterioration in one's acceptance. Lin and Kulik (2002) partially confirmed the above hypothesis and found that single women who were exposed to a photograph of a thin woman reported more anxiety than women who had a boyfriend. Boyfriend status did not influence anxiety levels in the oversize-peer or no-photo (control) conditions. However, having a boyfriend did not moderate the effect of exposure to a thin peer on women's body satisfaction or confidence. As with gender stereotype endorsement, this interesting finding awaits replication and extension through further research.

2.6 Discussion and conclusion

The studies reviewed above place the existing research on the effects of exposure to idealized mass media images in a new light. While a large number of studies found that all women are negatively affected by viewing such images (e.g., Dittmar and Howard, 2004; Heinberg and Thompson, 1995; Kalodner, 1997; Stice and Shaw, 1994; Tiggemann, 1996), our review highlights the presence of demographic, methodological, and personal moderators. These findings call the universality of media effects into question, suggesting that the extent to which women are affected by media portrayals depends on several personal and other

differences.

Our review strongly suggests that the women most vulnerable to the adverse effects of media are those who already have significant body issues (i.e., are either dissatisfied with their body or perceive their body as far from their ideal), and those who internalize the beauty ideal or are conscious about being evaluated by others. We found support for three more moderators, thinness attainability belief, gender stereotypes endorsement, and relationship status, but this evidence is based on single studies and therefore we do not make definitive conclusions about them here, though they clearly represent promising avenues for future work. Women who have a strong habitual tendency to compare themselves to other women may be also at risk, but this is unlikely to be a moderator by itself; it appears most powerfully when the internalization of body ideals is also taken into account. Despite relating more generally to health risks, only mixed support was found for the moderating role of weight/body-mass, and eating disorder status. These variables may relate to susceptibility to media effects only via additional correlated factors. For example, variation in women's weight might not directly lead to vulnerability, but dissatisfaction with that weight might. Mixed support was also found for the moderating effect of appearance schematicity, that is, the tendency to place great importance on appearance. Finally, speaking against conclusions sometimes drawn from correlational research (Myers and Crowther, 2007), the reviewed studies suggest that feminist attitudes and self-monitoring do not moderate any media effects on women's body image.

Several studies discussed above offered some support for both negative contrast effects and self-enhancement. The negative contrast effects approach is based on the expectation that women will upwardly compare themselves to media models and consequently will experience negative feelings and decreased self worth. Studies that tested three personal moderators seem to offer support for the above claim. First, women who reported higher actual-ideal body discrepancy were found to experience more negative effects of exposure (Bessenoff, 2006). Second, women who highly internalized the thinness ideal reported more negative media effects (Brown and Dittmar, 2005; Cattarin et al., 2000; Dittmar et al., 2009; Halliwell

et al., 2005; Heinberg and Thompson, 1995; Yamamiya et al., 2005), most likely because they were comparing themselves to the ideal presented to them. And third, women who had a stronger comparison tendency (Cattarin et al., 2000; Dittmar and Howard, 2004) or self-objectification tendency (Hamilton et al., 2007; Monro and Huon, 2006) also experienced more negative effects of exposure.

Self-enhancement theory proposes that not all upward comparisons have to lead to negative self-evaluations and feelings (Wheeler, 1966). When exposure to media models leads women to imagine themselves in their ideal bodies, the negative effects of exposure will be reversed. A number of studies seem to confirm this alternative theory. Two experiments revealed that viewing thin models in the media led to disinhibited eating (Mills et al., 2002; Seddon and Berry, 1996) and improved self-esteem and self image (Joshi et al., 2004) in dieting participants. These studies together suggest that dieting women may have indeed imagined themselves as being thinner than usual after watching the media images and that this led them to eat more and feel better about themselves. However, two other studies failed to find a moderating effect of restraint on other body satisfaction measures (Monro and Huon, 2006; Ogden and Munday, 1996).

Investigation of the moderating role of beliefs in attainability of a thinness ideal provides support for both negative contrast effects and self-enhancement. Mills et al. (2002) showed that women with stronger attainability beliefs reported less negative reactions to media images than women who did not believe they could reach the thinness goal. The researchers argued that stronger attainability beliefs led to self-enhancement whereas weaker attainability beliefs led to negative contrast effects. This study therefore offers a potential model of how negative contrast and self-enhancement effects might relate: the former occurs when the distance between self and media models is too far to bridge and thus an unreachable ideal, while the latter occurs when the distance seems manageable and thus the media models become a source of inspiration. Certainly, future research should further explore this promising possibility.

In summary, the presence of multiple personal moderators underscores the importance of investigating personal differences in research on mass media effects

and the need to be cautious about sweeping generalizations from just a few studies. We note, for example, that some intuitive moderators, like weight or the presence of eating disorders, may not be moderators by themselves but may only act via other aspects of womens body image, for example, body dissatisfaction or internalization of the thinness ideal. Therefore, analyses of potential mediational relationships are an important future direction.

2.6.1 Study limitations

As mentioned above, this literature review is a descriptive attempt to bring researchers attention to the important role of personal moderators of the effects of exposure to media on womens body concerns. One drawback of a descriptive style is that we cannot fully resolve whether a particular moderator is really meaningful when experimental studies show both presence and lack of moderation of given variables. However, given the small number of available studies employing each moderator and the range of dependent variables employed application of quantitative methods would also be limited. As research continues in this area, this may soon become a viable approach.

Differentiation between moderator categories was a particularly challenging task. In part this is due to the fact that researchers introduce or utilize a variety of constructs, without always defining them thoroughly or relating them to constructs used in prior work. Certainly, many constructs and categories are conceptually related to each other and boundaries between them were not always sharp. We would argue that at least in some cases, different constructs may not ultimately be independent. For instance, we treated restraint as a subcategory of eating behavior, but one could possibly treat this factor as a behavioral expression of body dissatisfaction. It is also unclear whether body consciousness and self-monitoring are independent constructs, and whether body dissatisfaction is sufficiently distinct from body image disturbance. Further research on the construct validity of these measures is needed to clarify the distinctions and verify the methods used to operationalize them.

2.6.2 Suggestions for further research

The above review presented a range of variables that were found to moderate the relationship between exposure to media-portrayed thinness and women's body concern. Consensus emerges in the cases of several, most prominently, body image discrepancy, internalization of the thinness ideal, and objectified body consciousness. We also reviewed mixed evidence in the case of additional moderators, namely weight, self-presentation tendencies and eating behavior. Due to the small number of studies in some areas, and the fact that we conducted a qualitative rather than a quantitative review, the status of some remain in doubt. Clarifying the mixed findings with respect to these variables should be among the priority questions for new investigations.

Of course, the range of possible personal moderators of media effects far exceeds the available research base, and future work should continue to test new possibilities. For example, does the extent to which women believe that media portrayals are realistic moderate the impact of those portrayals? We would expect that women who are conscious about the fact the media present artificially perfected beauty may shield themselves from the negative effects of these portrayals and remain unaffected in their self-evaluations. Also, does personality type matter in determining the extent to which women engage in upward or downward comparisons with media-portrayed models? We could assume that more neurotic women would experience more negative effects of exposure due to more upward comparisons than women who are more emotionally stable and might not consider themselves as inferior to these models.

As mentioned above, approximately 100 studies managed to establish the adverse effect of viewing thin models on women's body concern (Grabe et al., 2008), while very few addressed the issue of how to reduce or prevent this impact. More studies are needed investigating what might contribute to reducing women's vulnerability to advertising, especially because the analysis of moderating variables provides a much better idea of which women are most vulnerable. Yamamiya et al. (2005) were interested in this problem, and showed that presenting participants with media-literacy information (arguing that media present inappropriate

standards of beauty because female models are artificially perfected using various computer software) prior to viewing idealized images of thinness reduced the negative effects on their body concern. What other messages can protect women from the negative effects of advertising? How and when could we educate women to better deal with the unreal, unattainable and harmful portrayals of women in the mass media? It would also be interesting to replicate some of these findings in high-risk populations. For instance, women who plan to undergo or have undergone a plastic surgery might be particularly vulnerable to the effects of media messages, and could potentially benefit from targeted interventions.

When it comes to measures used, almost all of the above studies relied on self-reported data for measuring both the moderator and the outcome variables, many of the questionnaires being very explicit and direct. The exceptions among moderator variables that relied less on self-reports include one study that involved measuring participants' actual weight (Halliwell et al., 2005) and two that manipulated participants' comparison tendencies (Cattarin et al., 2000) and thinness attainability belief (Mills et al., 2002). A few studies also measured food intake as an outcome variable (Anschutz et al., 2008a; Anschutz et al., 2008b; Mills et al., 2002). Introducing more implicit measures could provide valuable insights into the problem, as women may choose not to disclose potentially embarrassing attitudes, facts and self-perceptions. A second common argument against using self-reports is that some of the attitudes and perceptions can be unconscious and participants may not have access to this information. The use of implicit computer-based tests measuring reaction time data may grant access to these internal feelings. Implicit tests, like the Implicit Association Test (IAT; Greenwald, McGhee, and Schwartz, 1998) have already been in use in clinical settings to measure automatic associations related to self-esteem (Buhlmann et al., 2008; Buhlmann et al., 2009) as well as in the study of phobias (Teachman, 2001; Teachman, 2002). Some initial work in this area has recently emerged, with promising results (Skorek and Dunham, *in press*).

Also important to note is the fact that most of the research on adverse effects of exposure to media portrayals of thinness involved images of thin advertising

models that are also attractive. None of the studies reported testing whether physical attractiveness or thinness is the stronger contributor to women's negative self-evaluations following exposure. Physical attractiveness and thinness are quite different concepts; beauty can be considered to have an external locus of control, as it is very difficult to change, whereas thinness can be seen as much easier to change and therefore with an internal locus of control, and the two can vary at least somewhat independently. It is possible that depending on which of these two concepts is activated when a woman looks at an advertisement, a reaction may be more or less negative. For example, we might expect a more negative response when a desired appearance characteristic is perceived as less attainable, like in the case of physical attractiveness. Or alternatively, failure to attain a controllable ideal, like thinness, could lead to a negative guilt-response. An investigation of the relationship between weight and beauty would be an important contribution to this field.

Finally, extending the study of personal differences to include non-White men and women would facilitate our knowledge of the extent to which media-portrayed thinness and its negative effect on women is a more general phenomenon. Experimental studies have been conducted in several places outside the U.S., including Australia (Durkin and Paxton, 2002; Tiggemann, 2003), Canada (Mills et al., 2002; Pinhas et al., 1999), Europe (Anschutz et al., 2009; Dens et al., 2009; Dittmar and Blayney, 1996; Knauss et al., 2007), and regions as remote as Fiji (Becker et al., 2002). But little work explores non-Western cultures including the Middle East, Asia, Latin America and Africa. Can we expect to find the same adverse effect of mass media in these countries, especially as degree of media saturation and government control over media images differ? This investigation could fruitfully employ additional cultural moderators pertaining to religion and value orientations. Moreover, as we mentioned in the introduction, men have received relatively little attention in the field. Despite this, recent meta-analytic work confirmed that media has adverse effects on men's body image as well (Barlett et al., 2008; Blond, 2008), pointing to the need for additional research exploring personal differences in their susceptibility to negative media effects. This is especially crit-

ical given recent evidence that men are at a similar risk of suffering from body concerns and eating disorders (Pope et al., 2000; Regan and Cachelin, 2006), even though these problems are much more often associated with women.

Research on the effects of exposure to mass media portrayals of thin models is an important and prolific field. However, factors such as the wide range of dependent measures and demographic and methodological differences have made it difficult to clearly identify dominant trends. Our review sought to lend clarity to this area by identifying the personal difference moderators for which there is strong evidence, mixed evidence, and counterevidence. We hope these results will serve as a useful guide to future research in this area.

Part III

Effects of exposure on self-esteem,
actual-ideal body discrepancy,
and perception of health risks

Introduction to Part III

Part III contains a report of two experimental studies, one conducted with female and the other with male participants. The primary contribution and the central research question of both of these studies is whether effects of exposure to portrayals of idealized bodies differ across race/ethnicity. The next important contribution is the investigation of these effects using both explicit and implicit measures of self-esteem to reveal whether implicit methods might reveal more subtle effects of exposure that explicit measures cannot. We are also providing a comparison of the study results across gender (see Figure 2.1).

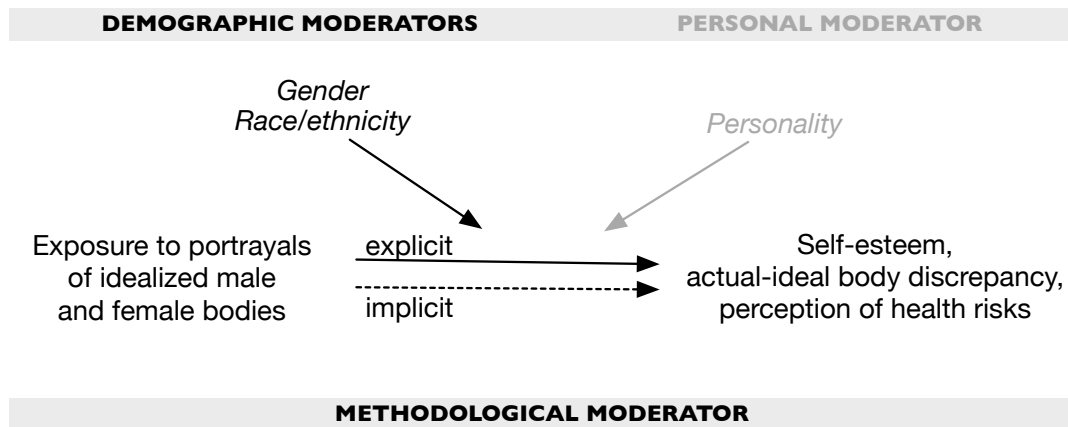


Figure 2.1: Overview of the experimental design of studies reported in Chapters 3 and 4 highlighting their major contributions. *Note.* The moderator shown in grey was not investigated in these studies.

The design of the two studies differed only with respect to one of two exposure conditions; men viewed in addition to images of idealized women images

of idealized men, while the second exposure condition for women included car ads (in addition to female ads). In both experiments there was an additional no-exposure control condition.

Chapter 3

Advertising portrayal of thin and attractive models and its effects in a diverse sample of women

3.1 Introduction

Exposure to idealized and often unrealistic body portrayals of women in advertising is known to have powerful effects on women's self and body image (Grabe et al., 2008; Groesz et al., 2002). Just to name a few prominent examples, experimental studies have demonstrated that women exposed to media portrayals of idealized bodies experience increased body dissatisfaction (Ogden and Munday, 1996; Shaw, 1995), higher levels of depression (Heinberg and Thompson, 1995; Stice and Shaw, 1994), increased anxiety (Dittmar and Howard, 2004; Kalodner, 1997), decreased self-esteem (Clay et al., 2005; Hawkins et al., 2004) and disinhibited eating (Mills et al., 2002; Monro and Huon, 2006). In addition, correlational research has revealed a reliable association between consumption of media that promote idealized body images and eating disorder symptomatology (Bissell and Zhou, 2004; Botta, 2003; Harrison and Cantor, 1997; Stice et al., 1994; Tiggemann and Pickering, 1996). However, nearly all the available research has been limited in two ways. First, it has focused almost exclusively on White women (Grabe

et al., 2008). This is a serious limitation of this research field, especially because, as we review below, there are theoretical grounds to expect that women of different ethnicities might respond differently to media influences. The second limitation of previous experimental research is its over-reliance on self-reported data. Mightn't some effects of media exposure only appear when subtler measurement techniques are employed? To address this possibility, we employed implicit methods that in contrast to self-reports can give access to lower level processes which might not be accessible to conscious introspection (e.g., Banaji, 2001). In particular, we hoped this approach would yield novel findings when focused on a dependent measure for which previously there was mixed support, namely the effect of media exposure on self-esteem. Thus, in this study we will investigate the impact of advertisements containing thin and attractive models on women's self image. Our novel contributions are the focus on an ethnically diverse sample of women, and our inclusion of an implicit measure. The following two research questions guide this study:

RQ₁: Do effects of media exposure on women's body image differ depending on race/ethnicity?

RQ₂: Are different patterns of results revealed when using implicit measures?

3.1.1 Exposure and race/ethnicity

The overwhelming majority of studies on exposure to idealized portrayals of women and their effects focused on White women (Grabe et al., 2008) and very little is known about these effects on ethnic-minority women. Only three studies compared the effect of viewing idealized media portrayals of women on body dissatisfaction and related measures in women of different race/ethnicity (Bissell and Zhou, 2004; Borzekowski et al., 2000; Schooler et al., 2004). Four additional studies examined the effects of exposure among single groups of ethnic-minority women: African American, Cuban American and Fijian (Becker et al., 2002; Frisby, 2004; Jane et al., 1999; Zhang et al., 2009).

The literature suggests several reasons why non-White women might be affected differently by exposure to the thinness and attractiveness ideals portrayed

by advertising. On the one hand, ethnic-minority women (African American and Hispanic women in particular) tend to idealize larger body sizes than White women (Botta, 2000; Gil-Kashiwabara, 2002; Parnell et al., 1996; Powell and Kahn, 1995; Rucker and Cash, 1992) and so when comparing themselves to media models members of these groups might perceive a larger discrepancy between themselves and the media ideal, leading to greater dissatisfaction and larger exposure effects.

On the other hand, the portrayal of particularly thin models may not match the internalized ideal held by ethnic-minority women, on which logic they would be less likely to directly compare themselves to media models, and so would feel less threatened by them. Indeed, prior research suggests that only Asian American women were found to endorse mainstream beauty ideals in a similar fashion to White women (Evans and McConnell, 2003; Kawamura, 2002) and would thus be likely to suffer from exposure to idealized thin portrayals to a similar extent. Based on the above, we suggest that race/ethnicity might be an important moderator of the effects of exposure to the thinness ideal. This might suggest smaller media exposure effects in some ethnic groups. Further support for this prediction can be derived from the fact that advertising portrays mostly White models (e.g., Botta, 2000). Following Social Comparison Theory (Festinger, 1954), which hypothesizes that comparing oneself to superior others results in negative self-evaluations and emotions, we might expect that White women would be more likely to upwardly compare themselves to White models than would non-White women (based on the similarity component). Put another way, White models might not be considered a reference group for ethnic minorities, leading to less comparisons and hence smaller effects of media exposure, as long as the media in question predominately features White women.

Thus the literature can support a prediction of *greater* or *lesser* media exposure effects in minority women. As we noted above, direct evidence remains limited, though correlational research provides some evidence that the results of exposure to media messages differ for women with different ethnic background (Bissell and Zhou, 2004; Borzekowski et al., 2000; Schooler et al., 2004). Borzekowski, Robinson, and Killen (2000) found that for White and African American women

there was a positive correlation between watching music videos and perceived importance of appearance. This relationship was not significant for Asian and Latino American women. Schooler, Ward, Merriwether, and Caruthers (2004) found that amount of mainstream media exposure predicted White women's poorer body image, while viewing African-American-oriented media was unrelated to their body image. In turn, viewing African-American-oriented media predicted a healthier body image for African American women, while mainstream media had no effect on their body image. Two further studies found that women who are frequently exposed to thinness-depicting media are more likely to be dissatisfied with their body; however, this relationship was stronger for White women than for women of other ethnicities (Botta, 2000; Bissell and Zhou, 2004). These few studies suggest that social comparison may account for ethnic differences in the effects of exposure, because exposure to mostly 'White' mainstream media seems to have a smaller effect on non-White women. However, correlational research cannot establish a causal relationship, and an experimental investigation can provide a clearer picture of the connection between media exposure and ethnicity. Based on the above we put forward our first hypothesis:

*H*₁: The effect of exposure to idealized bodies will differ for Asian American, Hispanic American and White American women, with smaller effects of exposure on Hispanic American women.

3.1.2 Explicit versus implicit self-esteem

There is ample evidence suggesting that self-esteem is largely stable over time (Greenwald, 1980; Swann, 1985). However, it is also well known that situational factors can affect it. For instance, comparing oneself to a superior tends to lower self-esteem (Festinger, 1954). On the other hand, perceiving a close relationship to a successful other may lead to temporary self-enhancement as in the example of basking in the glow of reflected glory (Cialdini et al., 1976). These few examples suggest that in addition to trait self-esteem, which is stable over time, there is also a state self-esteem, which is affected by numerous contextual factors (Heatherton and Polivy, 1991).

Previous research investigating the effect of exposure to media portrayal of idealized bodies on women's self-esteem focused on both types of self-esteem. The findings regarding these effects are clearly mixed. While some experiments found that exposure to idealized female portrayals decreased women's trait self-esteem (Clay et al., 2005; Hawkins et al., 2004; Wilcox and Laird, 2000), others found no effect of exposure (Dens et al., 2009; Lin and Kulik, 2002). Similarly, some researchers suggested that viewing images of thin models leads to lower state self-esteem (Bessenoff, 2006; Ip and Jarry, 2008; Joshi et al., 2004; Smeesters and Mandel, 2006; Strahan et al., 2008), whereas several others found no such effect (Henderson-King et al., 2001; Irving, 1990; Mills et al., 2002; Seddon and Berry, 1996).

All previous studies that investigated the effect of exposure on trait or state self-esteem used self-reports. Self-reported measures, however, have a number of limitations. First, participants do not always give truthful answers, as they may want to hide responses that are socially undesirable. This may be especially true for socially charged, personal, and potentially embarrassing issues. Second, even if motivation to tell the truth is high, certain information may not be available to introspection (Greenwald and Banaji, 1995) and can only be revealed using implicit measures of automatic processing. For example, research on intergroup prejudice has begun to focus on subtle, introspectively unidentified biases, such as negative affective responses to racial outgroups (Devine, 1989; Dovidio et al., 2002). Despite being unknown to the participant and not necessarily consistent with their explicit (i.e., self-reported) attitudes, these implicit forms of bias reliably predict behavior, often to a greater extent than do their self-reported counterparts (e.g., Greenwald, Poehlman, Uhlmann, and Banaji (2009).

As with intergroup attitudes, so too with self-esteem. Research suggests that implicit and explicit measures of self-esteem are at best weakly correlated (Bosson et al., 2000; Olson et al., 2007; Rudman et al., 2001; Spalding and Hardin, 1999) and potentially predictive of different outcomes (Bosson et al., 2000; Spalding and Hardin, 1999). For example, Spalding and Hardin (1999) showed that only implicit self-esteem predicted individuals' nonverbal anxiety during an interview,

whereas explicit self-esteem predicted their self-handicapping about the interview. Therefore, in our study we decided to use both explicit and implicit measures of self-esteem in order to reveal a potentially new pattern of results. Explicit measures are likely to reflect conscious beliefs participants have, while implicit measure may be more sensitive to subtle environmental influences such as recently encountered media. Therefore, our second hypothesis states that:

*H*₂: Implicit measure of self-esteem will reveal a stronger pattern of exposure effects than explicit self-esteem.

In addition to implicit and explicit self-esteem, we will investigate exposure effects on women's actual-ideal body discrepancy and perception of health risks associated with body weight. Actual-ideal body discrepancy, that is a difference between women's perceived actual and their ideal body size, will be included in this study because body image and self-esteem are inextricably linked. In fact, the average correlation between perception of appearance and self-worth is .65 (Harter, 1999). Asking participants about health risks associated with body weight will be used in order to explore this novel way of asking women about their body ideals.

3.2 Method

3.2.1 Participants

Two hundred and two female undergraduate students (age $M = 19.7$, $SD = 3.9$) from a small U.S. university volunteered to participate in the experiment in exchange for partial credit for their introductory psychology course requirement. Eighty two were Asian (41.2%), 71 Hispanic (35.4%), and 46 White (23.1%). This distribution reflects this university's unique student population. Five women were excluded for being extreme outliers in terms of both age and body size.

3.2.2 Procedure

Shortly after arrival to the lab participants signed a consent form and were randomly assigned to one of three conditions: viewing advertisements portraying

female models, viewing cars ads, or no exposure. They were told they would participate in two or three unrelated tasks, depending on condition, and participated individually. First, a priming task containing advertisements was introduced as part of a larger marketing study of products advertised on television. Participants in the exposure conditions viewed the commercials and answered a few questions related to each of them. Women in the control condition received no priming. Next, subjects were asked to participate in a categorization task that investigated how people classify words (Implicit Association Test). Finally, participants received a ‘Health Psychology’ questionnaire that was supposedly developed in cooperation with school’s health psychology department to study students’ mental health. This packet contained all above explicit measures. The entire experiment took approximately 25 minutes to complete for women in the exposure conditions and 10 minutes for control participants. An overview of the experimental design of the study is presented in flowchart in Figure 3.1.

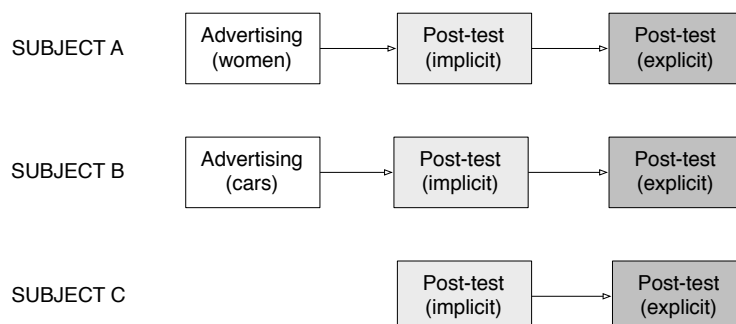


Figure 3.1: Experimental design of the study (between-subjects).

3.3 Materials

3.3.1 Priming task

Participants in the first exposure condition viewed 16 U.S. television advertisements of fragrances (e.g., Jadore by Dior or Sensi by Armani), underwear (e.g., Victoria’s Secret) or beachwear (e.g., Old Navy) which highlighted women’s

thin and attractive bodies (see screenshots and pretest results in Appendix B.1). The second exposure condition was a ‘neutral’ condition which contained 16 TV advertisements of cars (e.g., Audi TT, or Honda Element) without any people in them (Appendix B.3). Each TV advertisement lasted between 30 and 60 seconds and the overall exposure time was approximately 11 minutes. Advertisements were presented in one order only. To strengthen the cover story of a ‘marketing study of advertising effectiveness’ participants were asked to rate each advertisement on four criteria (good, likable, enjoyable, attention-getting) using a 7-point Likert-type scale. In addition, subjects were asked two questions about their buying behavior: *Have you ever bought the advertised product?* and *Would you buy the product based on the ad shown?* The questions were adopted from Rudman and Borgida (1995) and were asked after each advertisement was viewed. Participants in the control condition viewed no ads.

3.3.2 Implicit measure of self-esteem

The Implicit Association Test (IAT; Greenwald, McGhee, and Schwarz (1998) was used to measure implicit self-esteem. The IAT is a response latency measure of dichotomous categorization, in which participants rapidly classify four kinds of stimuli using just two response buttons. In the present case, participants might press a left response button in response to self-related words and positive adjectives, and a right response button in response to other-related words and negative adjectives. In a second block of trials, the pairings would be reversed such that self-related words would now be paired with negative adjectives and other-related words with positive adjectives. The logic of the IAT is that associated categories will be more rapidly categorized using the same response key. If participants have a positive association with the self, they will be faster when the self-related words share a key with positive adjectives. By computing an effect size to measure the degree of facilitation during this pairing, we can produce a measure of implicit self-esteem. Thus, our self-esteem IAT consisted of words relating to self (target words: I, me, my, mine, self), other (them, they, their, theirs, others), pleasant (joy, warmth, gold, happy, smile, pleasure), and unpleasant (gloom, agony, pain,

stink, filth, death). Stimuli were derived from Greenwald et al. (2002). Reliability and validity of the IAT measure has been demonstrated in a large number of studies (Greenwald and Nosek, 2001).

We used a standard five-block IAT. In the first block, participants practiced categorizing words into self versus other categories (20 trials). In the second block participants practiced categorizing words into pleasant and unpleasant categories (20 trials). In the third block, which was the first critical block from which data was analyzed, target categories and attributes were combined such that participants had to categorize words from all four categories. For example, self and pleasant words might assigned to one key, and other and unpleasant words to another (60 trials). In the following practice block, the keys to which attributes *pleasant* and *unpleasant* were assigned were reversed and participants practiced the categorization of the attribute category words (40 trials); this block serves to reverse the side association built up during the preceding blocks. Block five, the second critical, data collection block, involved the opposite pairings from block 3, so in this example self and unpleasant words and other and pleasant words (60 trials). The order of critical blocks (i.e., self with pleasant first or self with unpleasant first) was counterbalanced across participants. We employed the revised scoring algorithm provided by Greenwald and colleagues (Greenwald et al., 2003); this procedure drops extremely fast or slow latencies, and excludes participants with excessive fast latencies, an indication that task instructions were not followed. The final score was computed as the standardized difference in mean between the task in which categories *self* and *pleasant* were paired together, and the task in which categories *self* and *unpleasant* were combined. Positive IAT scores indicated then that participants categorized items faster when the categories *self* and *pleasant* were assigned together to one response key than when *self* and *unpleasant* were linked together. This pattern is interpreted as showing that on an implicit level subjects held a stronger association between pleasant-meaning words and themselves than pleasant words and others, in other words that they have positive implicit self-esteem.

3.3.3 Explicit measures

Self-esteem

Three procedures to measure explicit self-esteem were administered: a feeling thermometer (sliding scale), a standard self-esteem inventory - Rosenberg's (1965) Self-Esteem Scale (RSES), and a Likert-like rating scale. First, participants were asked to mark how warmly/favorably they feel about *themselves* and about *other people* by placing a horizontal mark on the feeling thermometer that had three anchors: 0 (*cold/unfavorable*), 50 (*neutral*) and 100 (*warm/favorable*). The final score was achieved by subtracting the temperature for the *other people* from that of *oneself* (see Appendix A.3). Next, we used Rosenberg's (1965) self-esteem questionnaire that includes 5 positive and 5 negative self-descriptive statements. We added additional four items to the original scale which were statements about one's health (e.g., *I think I exercise enough every week*, or *I am concerned about my health*), in order to motivate participants to believe the questionnaire was related to Health Psychology (see Appendix A.4). Participants were asked to report how much they agree with each of the 14 statements on a 4-point Likert scale (1 - *strongly agree*, 4 - *strongly disagree*). The sum of the ratings assigned to all the items, after reverse scoring the positively worded items, indicated one's self-esteem level. Scores ranged from 0 to 30; higher scores indicating higher self-esteem. Finally, we used a questionnaire which consisted of 6 unpleasant-meaning and 6 pleasant-meaning words previously appearing in the IAT (Greenwald et al., 2002). Participants rated how characteristic of them each of these words was on a 7-point Likert-type scale (anchors 1 - *not at all characteristic of you* and 7 - *extremely characteristic of you*, see Appendix A.5). The final score was constructed by subtracting the average score for the unpleasant words from that for the average for pleasant words. The scores obtained using these three procedures were planned to be combined into one index of explicit self-esteem following previous research that suggests their high inter-correlations (Greenwald et al., 2002; Olson et al., 2007).

Actual-ideal body discrepancy

Actual-ideal body discrepancy was measured using a Pictorial Body Image Scale (Stunkard et al., 1983). This scale consists of 9 drawings of women's figures ranging from extremely thin to extremely heavy presented in a horizontal row (see Appendix A.2). Participants were asked to answer the following four questions: (1) Which drawing looks most like your own figure? (actual body image), (2) Which figure do you most want to look like? (own body ideal), (3) Which figure do you think most women want to look like? (own sex ideal body), (4) Which figure do you think most men find most attractive? (opposite sex body ideal) (after Cohn and Adler, 1992). The three ideal body image variables (all but the first variable) were expected to correlate highly, as shown by Lavine et al. (1999), and were planned to be converted into one composite measure of ideal body size. Construct validity and reliability of this measure is well established (Banasiak et al., 2001; Wertheim et al., 2004; Williams et al., 2001).

Next, we calculated women's actual-ideal discrepancy score by subtracting participants' composite ideal body image (average of the last three questions) from their actual body image. Positive scores indicate that one's actual body image is larger than a desired body image, while negative scores indicate that one is thinner than desired (after Lavine, Sweeney, and Wagner, 1999).

Some authors (e.g., Lavine et al., 1999) consider positive discrepancy scores as synonymous with body dissatisfaction. However, we argue that perception of difference between own and ideal bodies does not necessarily imply dissatisfaction. One can notice the difference and still be satisfied with one's own looks and body image. Therefore, we avoid referring to this discrepancy as 'body dissatisfaction'.

Perception of health risks

Two questions were asked to measure women's perception of weight-related health risks: (1) *Which figure do you think depicts a health-risk posed by being too skinny?* (risk of anorexia nervosa), *Which figure do you think depicts a health-risk posed by being too heavy?* (risk of obesity). We included this measure because besides the fact that women from different ethnic groups may have different body

ideals they may also associate health risks with different body sizes, which may in turn influence their internalization of body ideals. Participants used the above Pictorial Body Image Scale to indicate their responses. Each participant's final score was obtained by subtracting a score reflecting a health-risk posed by being too skinny from a score reflecting a health-risk posed by being too heavy. The resulting score indicates a perceived range of healthy body images.

3.4 Results

3.4.1 Data reduction

Following the revised scoring algorithm for the IAT (Greenwald et al., 2003) mentioned above we excluded 5 women for not taking the experiment seriously; they had too many very short responses ($< 300ms$) which indicates that these participants were hitting the keys without having enough time to consciously categorize the stimuli. Therefore, the final sample included 192 women (we mentioned earlier that additional 5 women were excluded for being outliers). The overall attrition rate in the study was 4.9%.

3.4.2 Creating indices

Correlations among the different measures of explicit and implicit self-esteem were computed in the sample of 192 women (Table 3.1). As in past studies (Bosson et al., 2000; Olson et al., 2007; Rudman et al., 2001; Spalding and Hardin, 1999) the implicit (IAT) and explicit measures of self-esteem were uncorrelated. Given the small to moderate correlation between the three explicit measures of self-esteem we were not able to produce an index of explicit self-esteem composed of these three measures (Standardized item $\alpha = .32$).

We were also not able to create an ideal body size index. After standardizing and averaging the following measures of body ideal: own ideal body size, other women's ideal body size and men's ideal of women's body size, it turned out that the resulting index was not adequately reliable (Standardized item $\alpha = .66$). All

Table 3.1: Zero-order correlations between explicit and implicit measures of self-esteem.

<i>Measure</i>	IAT	RSES	Feeling thermometer	Likert-like scale
IAT	-	.03	.03	.04
RSES		-	.42***	.60***
Feeling thermometer			-	.32***
Likert scale				-

Note. IAT - Implicit Association Test (Greenwald et al., 1998),
RSES - Rosenberg (1965) Self-Esteem Scale.
Basis: 188 women (listwise deletion).
*** $p < .001$ (Pearson).

three measures of body ideal correlated weakly to moderately with each other ($.27 < r < .49$, $N = 192$, $p < 0.001$).

3.4.3 Descriptive statistics

On average women in our sample had a positive implicit ($M = .61$, $SD = .32$) and explicit self-esteem (RSES $M = 20.9$, $SD = 6.04$; feeling thermometer $M = 3.22$, $SD = 1.61$; Likert $M = 1.23$, $SD = 22.73$). T -test analyses showed that the implicit ($t(191) = 26.13$, $p < .001$) as well as two explicit measures of self-esteem (RSES $t(190) = 13.48$, $p < .001$; Likert $t(189) = 27.67$, $p < .001$) were different from 0. The average value of explicit self-esteem measured using the feeling thermometer was, however, not significantly different from 0 ($t(189) = .75$, $p > .10$). The feeling thermometer and Likert-like scale had a rational zero point, but for the RSES scale we let zero correspond to the midpoint between the 2nd and 3rd point of the 4-point agreement scale (Greenwald et al., 2002). Women's average body size was close to figure no. 4 ($M = 3.97$, $SD = 1.36$) and the average body ideal was thinner by one body size ($M = 3.09$, $SD = .86$); the actual-ideal body discrepancy was on average slightly smaller than one body size - .88 ($SD = 1.14$). Women considered on average 6.05 ($SD = 1.72$) body sizes as free from weight-related health risks.

Multiple one-way ANOVAs with race/ethnicity as the independent predictor revealed, that regardless of their race/ethnicity all women reported similar implicit self-esteem ($F(2, 189) = .31$, $p > .10$), explicit self-esteem (RSES $F(2, 188) =$

2.19, $p > .10$; thermometer $F(2, 187) = 2.10, p > .10$; Likert $F(2, 187) = .84, p > .10$), perception of own ($F(2, 189) = .02, p > .10$) and ideal body size ($F(2, 189) = .30, p > .10$), and actual-ideal body discrepancy ($F(2, 189) = .31, p > .10$).

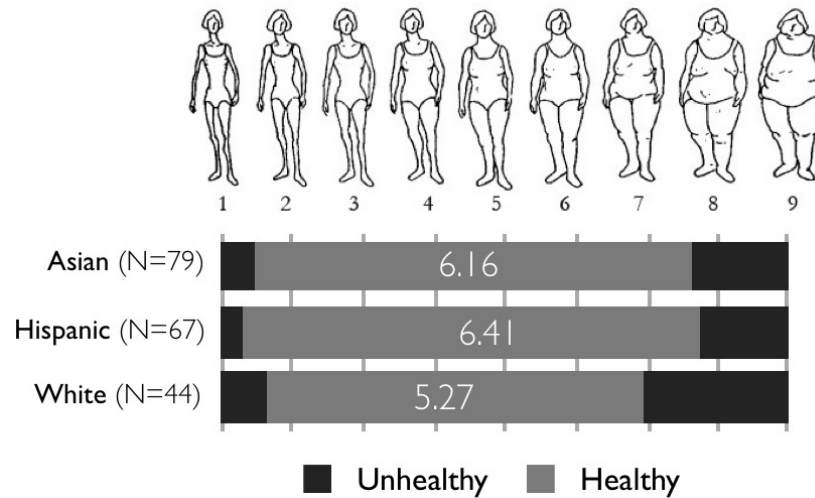


Figure 3.2: Women's perception of healthy body sizes across race/ethnicity (predicted means). *Note:* The range of bodies perceived as free from weight-related health risks for White women is significantly smaller than the range perceived by Asian ($p < .05$) and Hispanic women ($p < .01$). The perceived range of healthy bodies by Asian women is not statistically different from the one of Hispanic women ($p > .10$).

Interestingly, we found that the range of body sizes considered free from weight-related health risks was significantly different across race/ethnicity ($F(2, 187) = 6.60, p < .01$). Post-hoc tests revealed that only White women's ratings were significantly different from the ratings of the other groups of women (mean difference for the White-Asian comparison was $.89, p < .05$, for White-Hispanic $1.14, p < .01$, and for Asian-Hispanic $.25, p > .10$, Tukey HSD). White women considered the smallest range of bodies to be free from weight-related risks (5.27), while Asian and Hispanic women reported significantly more body sizes to be healthy as compared to White women (6.16 and 6.41 respectively), see Figure 3.2.

3.4.4 Exposure effects and implicit measures

We ran univariate between-subjects ANOVAs with three independent factors: exposure condition, race/ethnicity, and age, for each of the dependent variables. Investigation of age differences is not the main interest of this study, however, we included these variables as an independent predictor based on previous findings showing that self-esteem increases over adolescence and early adulthood (for a review, see O'Malley and Bachman, 1983). In partial support of hypothesis 2, stating that implicit measure of self-esteem will reveal a different pattern of exposure effects than explicit self-esteem, we found that exposure condition had a significant effect on women's *implicit* self-esteem ($F(2, 143) = 5.54, p < .01$), but no significant effect on women's *explicit* self-esteem (RSES $F(2, 142) = .38, p > .10$; thermometer $F(2, 141) = 1.10, p > .10$; Likert $F(2, 141) = .42, p > .10$). However, the differences in mean implicit self-esteem scores between any two conditions were not significant ($p > .01$, Tukey HSD), see Figure 3.3.

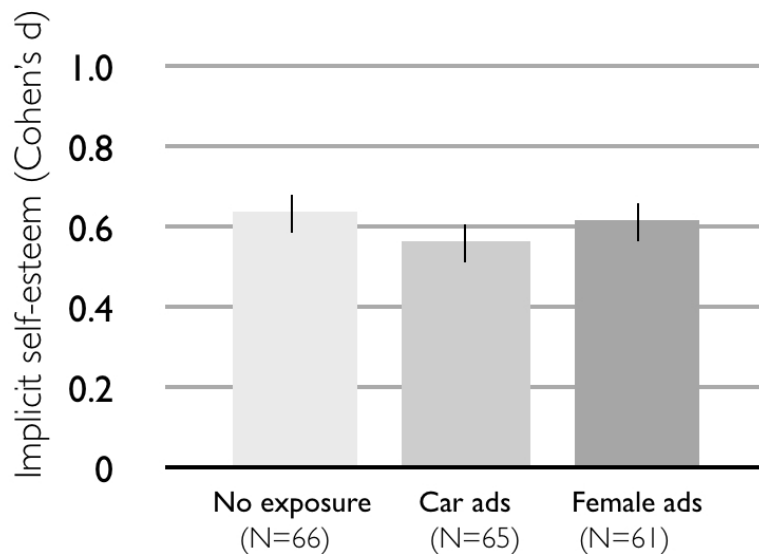


Figure 3.3: Women's implicit self-esteem across exposure conditions (predicted means; no significant differences between conditions). *Note:* Error bars represent $1SE$.

Multiple one-way ANOVAs with exposure condition as the only indepen-

dent factor revealed no significant main effects of exposure: implicit self-esteem ($F(2, 189) = .86, p > .10$), explicit self-esteem (RSES $F(2, 188) = .01, p > .10$; thermometer $F(2, 187) = .70, p > .10$; Likert $F(2, 187) = .09, p > .10$), actual-ideal body discrepancy ($F(2, 189) = .92, p > .10$), range of bodies free from weight-related risks ($F(2, 187) = 2.0, p > .10$).

3.4.5 Exposure effects across race/ethnicity

Univariate ANOVAs with exposure condition, race/ethnicity, and age revealed the following results. We found no condition and race/ethnicity interaction for women's implicit self-esteem ($F(2, 143) = 1.16, p > .10$), explicit self-esteem (RSES $F(2, 142) = 1.04, p > .10$; thermometer $F(2, 142) = .97, p > .10$; Likert $F(2, 142) = .14, p > .10$), actual-ideal body discrepancy ($F(2, 143) = .33, p > .10$), and perception of body sizes free from health risks ($F(2, 141) = .71, p > .10$). These results disconfirmed hypothesis 1 suggesting that exposure to advertisements portraying thin and attractive women has a different effect depending on women's racial/ethnic background.

3.5 Discussion

Contrary to our expectation, viewing advertisements portraying thin and attractive women did not have an effect on women's explicit self-esteem, actual-ideal body discrepancy, or perception of weight-related health risks. We did report a significant effect of exposure on implicit self-esteem, however, post-hoc tests showed no differences between any two conditions. This suggests that in this study women were not affected by exposure to any advertisements, portraying women or cars. This is overall surprising provided a large body of research that reported mostly negative effects of exposure to idealized women in advertising on a number of outcomes, including trait self-esteem (Grabe et al., 2008). However, a possible explanation for the null result in our study appears when we review these studies in more detail. Five prior studies reported a negative effect of exposure to thin models on women's trait self-esteem measured using Rosenberg's Self-Esteem

Scale. Clay et al. (2005) showed that young women who viewed thin advertising models reported significantly lower self-esteem. This difference was found only when controlling for women's age, awareness, and internalization of sociocultural ideals, and social comparison tendencies. In a study including women diagnosed with eating disorders patients and college students, Hawkins et al. (2004) found that exposure to images of thin women in advertisements led to lowered self-esteem, this effect being stronger in women suffering from eating disorders. A negative effect of exposure to thin models on women's self-esteem was also found in a study by Wilcox and Laird (2000) but only in women whose emotions were based on personal cues (Laird et al., 1994). Among women unresponsive to personal cues, looking at thin models had an opposite effect and increased their self-esteem. No *main effects* of exposure to thin models on self-esteem were found in two further studies (Dens et al., 2009; Lin and Kulik, 2002), in which no additional variables were included. It appears from this prior work, that self-esteem interacts with other variables that moderate or mediate the effect of exposure to idealized female portrayals on self-esteem. In our study, we did not investigate any such variables and therefore could not analyze more complex models of exposure effects. We will take into account these complex relationships in further studies (see Chapters 7 and 8).

This study is the first investigation of the effects of exposure to idealized female portrayals on women from three racial/ethnic backgrounds. Contrary to our hypothesis, the results showed that Asian American, Hispanic and White women reacted in similar ways to media exposure. Our expectation of difference across race/ethnicity was based on the Social Comparison Theory (Festinger, 1954). This theory asserts that comparing oneself to superior others results in negative self-evaluations and emotions. Because mass media feature predominantly White women, we speculated that non-White women may not consider White models to be their reference group and consequently ethnic-minority women may engage in fewer upward comparisons, sheltering them from the negative effects of idealized media portrayals. However, our results did not bear this out. Whether this is because social comparisons were equally prevalent across ethnic groups or

because direct social comparisons is not the mechanism by which media effects emerge is a pressing question for future study. Further investigations are needed to establish whether our finding that all women react similarly to media portrayals holds across different dependent measures and manipulations. If women react to idealized body portrayals in similar ways regardless of their ethnic background it would have important implications for further research on women's eating disorders and planned interventions, suggesting a commonality of effects across diverse women.

Our current findings parallel recent new directions in research on women's body dissatisfaction. Meta-analytic work challenged the common idea that White women suffer more from body concerns than non-White women, the so-called *golden girl problem* (Smolak and Striegel-Moore, 2001). Recent analyses demonstrated that even though body dissatisfaction and prevalence of eating disorders among White women is greater than among non-White women (Asian, African American or other, $d = .41$ for body dissatisfaction across 15 studies and $d = .15$ for eating disorders across 10 studies) (Wildes et al., 2001) only the White-African American comparison is consistently reliable ($d = .29$ across 93 studies) (Grabe and Hyde, 2006). The differences between White women's body satisfaction and that of Asian or Hispanic American women are small or insignificant (Grabe and Hyde, 2006). Thus, our experiment and related recent research suggests that White women are not suffering more from body concerns than women of most other races/ethnicities. Continuing to believe in that myth might lead to a disparity in the allocation of resources to diagnose or treat eating disorders. If health specialists have a stereotype that primarily White women suffer from these disorders they may overlook eating disorder symptoms in ethnic minority women and design treatment programs aimed at White populations that may not necessarily be suitable for non-White women. Therefore, research on body image of ethnic-minority women is crucial. This study contributes to answering the under-researched question of sources of body dissatisfaction in women of different backgrounds (Grabe and Hyde, 2006) by suggesting that media influences are possibly similar across ethnicity of women.

Despite failing to find ethnic differences in exposure effects, we showed racial/ethnic differences in women's *perception* of weight-related health risks. The fact that only White women consider the narrowest range of body sizes to be free from the risk of weight-related problems like anorexia, obesity or diabetes raises the possibility that Asian and Hispanic women might be less aware of these health problems and fail to recognize them. This ethnic difference in perception of health risks may have important implications for rising rates of obesity in Asian and Hispanic women (Davis et al., 2004; Flegal et al., 1998). Moreover, the importance of this finding lies in the relationship between different concepts of body ideal. When we asked women explicitly to indicate their ideal body size we found no differences across race/ethnicity. On average, women from all ethnic groups selected body size no. 3 (Figure 3.2). However, when we asked which bodies are free from health-risks posed by being too skinny or too heavy, we recorded differences in women's acceptance of different body sizes (Hispanic and Asian women accepted slightly more skinny women and more heavy women than White women). Perhaps women's answers to the first more explicit question about women's body ideal reflect that all women have internalized the mainstream ideal. The latter question is more novel and it might have been more difficult for participants to 'know' or rely on societal standards. Thus, measuring women's perception of weight-related health risks could be a new, less direct and more concrete way of asking about women's body ideals.

In our study we used realistic advertisements in order to study effects as close as possible to women's media experiences outside of the lab. However, this means that our sample of advertisements most likely confounded the concepts of thinness and physical attractiveness, a limitation of many previous studies (Halliwell and Dittmar, 2004; Halliwell et al., 2005). It is not absolutely clear whether the effects of exposure are brought about by advertising models being thin, thin and attractive, or only attractive. Some studies exposed women to images of fashion models and as a control used images of more realistic or average-looking women (Dittmar and Howard, 2004; Halliwell and Dittmar, 2004; Halliwell et al., 2005; Martin and Kennedy, 1993), or overweight women (Crouch and Degelman, 1998;

Smeesters and Mandel, 2006) and found that only the effects of exposure to fashion models were negative. Others manipulated attractiveness as well as weight basing their sample on pilot ratings of both attractiveness and thinness (Irving, 1990). But the body size and attractiveness dilemma still remains unresolved in those studies, as different women are shown in different conditions. Therefore, the best way around this is the investigation of exposure effects using artificially created control advertisements, for instance, using the same advertisement stretched to be in a few different body sizes (either achieved with the help of computer software or using different screen sizes). A few studies employed this strategy (Anschutz et al., 2008a; Clay et al., 2005; Monro and Huon, 2006) but have not reached concrete conclusions regarding the impact of weight versus attractiveness. Therefore, further investigations of the relationship between these two aspects of women's portrayals are needed.

In addition, implicit measurement and race/ethnicity need to be addressed in research on the effects of media exposure in men. Men, even though much less frequently studied in this area than women, are also found to experience negative body image following exposure to idealized images of men and women (Barlett and Harris, 2008; Blond, 2008). And it is equally crucial to understand which men are most vulnerable to the negative media messages. We have investigated the same research questions as in the current study in a diverse sample of men (see Chapter 4). Finally, even though the majority of research on the adverse media effects on body image used White American samples and media content researchers suggest that this is not a local concern but a more universal problem. Idealized body portrayals were found to affect women in several European countries (Anschutz et al., 2009; Dens et al., 2009; Dittmar and Blayney, 1996; Knauss et al., 2007), Canada (Mills et al., 2002; Pinhas et al., 1999), Australia (Durkin and Paxton, 2002; Tiggemann, 2003), and Fiji (Becker et al., 2002). However, several regions, like the Middle East, Southern America, Africa and Asia, are still heavily understudied and await investigation.

3.6 Conclusion

Overall, the current study has important implications for further research on the effects of idealized body portrayals on women's self and body image. It is the first investigation of such effects in an ethnically diverse sample. Even though this study did not support our prediction that women would be differently affected by advertising exposure, we did find that women's racial/ethnic background matters for their perception of healthy body sizes. This finding may be helpful in designing targeted interventions and media campaigns focusing on ethnic-minority women suffering from eating disorders. We have not found that exposure to idealized media models has any effect on women's implicit or explicit self-esteem. However, this may result from the fact that we have not included important moderators or mediators of these effects. See Chapters 7 and 8 where we took additional variables into account and further attempted to demonstrate whether the use of implicit methods offers a crucial advantage over self-reports.

Chapter 4

Self-enhancement following exposure to idealized body portrayals in ethnically diverse men: A fantasy effect of advertising

4.1 Introduction

We live in a media-saturated world, exposed to vast amounts of media images each and every day. Over the last decade, significant attention has been devoted to understanding how this exposure shapes people's perceptions of their selves and, most notably, their bodies. Research has predominantly focused on women, demonstrating that mass media portraying unrealistic and unattainable ideals of beauty can have a negative effect on women's self image (for a review see Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Levine & Murnen, 2009). The most often proposed explanation for a mechanism through which the negative effects of exposure to media images occur is derived from Festinger's (1954) Social Comparison Theory (SCT; for examples see Bessenoff, 2006; Dens et

al., 2009; Grogan et al., 1996). SCT argues that people routinely compare themselves to others, and when such comparisons are upward, that is to superior others, negative emotions and lowered self-esteem result (Festinger, 1954). Therefore, if media models are perceived as superior and thus invoke upward comparisons, this could cause the negative consequences that have often been observed.

Despite the influence of SCT on contemporary accounts of media influence, a growing body of literature has demonstrated an opposite pattern of results. Several experimental studies found that women exposed to idealized female portrayals experienced increased body satisfaction (Coolican, 1999), increased appearance self-esteem (Mills et al., 2002), and decreased levels of depression (Myers and Biocca, 1992). One explanation for this divergent pattern of findings comes from Wheeler (1966), who argues that not all types of upward comparisons have to result in negative self-evaluation. In particular, for individuals who see themselves as close to an ideal, viewing thin and highly attractive models may have an inspirational (Collins, 1996) or ‘fantasy effect’ (Myers and Biocca, 1992) which will bolster their self-esteem.

Still, women are believed to be mostly negatively affected by advertising when media images prompt them to make upward social comparisons. But what about men? Do they show similar negative effects of media exposure, and if so, are they driven by similar social comparison processes? Or do they, too, show positive exposure effects in some situations? While several dozen correlational and experimental studies have investigated women (Grabe et al., 2008), men have not received as much attention, with only about a third the number of studies on record (Barlett et al., 2008; Blond, 2008). This research disparity is troubling when we acknowledge that men are becoming increasingly dissatisfied with their bodies (Adams et al., 2005) and are increasingly suffering from eating disorders like anorexia nervosa or bulimia nervosa (Hoek, 2006; Hudson et al., 2007; Striegel-Moore et al., 2009). Since mass media exposure is often associated with increased eating disorders symptomatology (Becker et al., 2002; Moriarty and Harrison, 2008; Tiggemann, 2003), investigations of mass media effects on men’s self image are needed to understand factors increasing men’s susceptibility to these effects.

Recent meta-analytic work (Barlett et al., 2008; Blond, 2008) suggests that viewing idealized male bodies in advertising has a small but statistically significant negative impact on men's self image (i.e., self-esteem, body esteem, and body satisfaction). To give a few specific examples, viewing portrayals of idealized (i.e., attractive and muscular) men in advertisements decreased men's self-esteem (Farquhar and Wasylikiw, 2007), body esteem (Grogan et al., 1996; Hobza et al., 2007), and body satisfaction (Hausenblas et al., 2003; Lorenzen et al., 2004), whereas it increased men's feelings of anxiety and depression (Agliata and Tantleff-Dunn, 2004; Halliwell et al., 2007). Viewing portrayals of idealized women also led to greater levels of anxiety (Johnson et al., 2007), greater actual-ideal body discrepancy (Lavine et al., 1999), and decreased body esteem (Dens et al., 2009). On the other hand, one study found that exposure to idealized male portrayals may also have self-enhancing effects by lowering men's negative affect (Halliwell et al., 2007). However, at present this is the only study to report a 'fantasy effect' in men. With regard to the effect of exposure of men to female portrayals, some researchers have suggested that exposure to ideal female bodies encourages men to see themselves as a potential mate for the women (van der Meij et al., 2010; Roney et al., 2007). In this case, the particularly attractive women portrayed in advertising might create a 'fantasy effect' in which men imagine themselves with this woman, leading to increased self-esteem stemming from the high desirability of the imagined mate (see also 'thinness fantasy' in women, Myers & Biocca, 1992).

Like research on the effects of exposure on women's self image (Skorek and Dunham, under review-a) , literature on men suffers from two limitations. First, researchers have focused almost exclusively on White men (the proportion of White participants has rarely been lower than 80%), and there are no reported comparisons of media effects across race/ethnicity. Therefore, investigations of non-White men are needed to test the generalizability of the previous findings (Halliwell et al., 2007; Hobza et al., 2007). The second limitation of previous research is its reliance on self-report data. In many research domains, incorporating 'implicit' measurement strategies has revealed new phenomena that challenge prior accounts (for health psychology see Hofmann, Friese, & Wiers, 2008; Wiers, et al.,

2010; clinical psychology, see Teachman, Cody, & Clerkin, 2010; social psychology, see Greenwald, et al., 2009); we expect this to be no less true in the domain of media exposure effects. In particular, we hope this approach will yield novel findings when focused on a dependent measure for which previously there has been mixed support (see below), namely the effect of media exposure on self-esteem. We discuss each of these issues in more detail below.

4.1.1 Advertising exposure and race/ethnicity

Culture and ethnicity often dictate different body ideals. For instance, as compared to White men African American men rate larger female silhouettes as attractive and desirable (Rosen et al., 1993; Thompson et al., 1996). African American men also prefer larger male bodies than do White men (Thompson et al., 1996) (controlling for socioeconomic status and body mass index), whereas Asian men are similar to White men in their desired body weight (Barr, 1995). Unfortunately, comparisons of body ideals across ethnicity are scarce. African American and White men are the most often compared groups, with much less known about body ideals in Asian and Hispanic Americans.

How might different ethnic groups differ in their reactions to idealized male bodies? It turns out that one can motivate several quite different predictions. Following SCT (Festinger, 1954) we might expect that men with larger body ideals might experience more of a discrepancy with media ideals and thus be more prone to negative exposure effects. If so, ethnic groups that tend towards larger body ideals would be more negatively affected; for instance, we would expect more negative exposure effects in Hispanic American or African American men as compared with Asian and White American men. But SCT can also motivate the contrary possibility. If ethnic minorities do not consider White models, which are predominant in advertising, to be a reference group, they might resist social comparison entirely, thereby sheltering themselves from the negative effects of such comparisons. Thus, while both of these possibilities lead to the expectation of ethnic differences in exposure effects, they differ in the predicted direction of difference.

How might ethnic differences emerge with regard to the self-enhancement

followed by viewing idealized female models? Again, minorities could be imagined to experience an even larger lift due to the desirability of high-status majority models, or less lift if this ‘fantasy effect is less likely to occur when viewing women from a different ethnic group. Given the possibility of motivating two competing predictions, we do not advance a strong hypothesis. Rather, the current study seeks to disentangle these various possibilities by directly investigating media effects in a diverse population.

4.1.2 Explicit versus implicit self-esteem

There is ample evidence suggesting that self-esteem is largely stable over time (Greenwald, 1980; Swann, 1985). However, it is also known that situational factors can affect it. For instance, comparing oneself to a superior tends to lower self-esteem (Festinger, 1954). On the other hand, perceiving a close relationship to a successful other may lead to temporary self-enhancement as in the example of basking in the glow of reflected glory (Cialdini et al., 1976). These few examples call to our attention the fact that, in addition to trait self-esteem, which is stable over time, there is also a state self-esteem, which is affected by numerous contextual factors (Heatherton and Polivy, 1991).

Previous research investigating the effect of exposure to media portrayal of ideal bodies on men’s self-esteem focused on both types of self-esteem. The findings regarding these effects are mixed. While some experiments found that exposure to ideal male portrayals decreased men’s trait self-esteem (Green and Pritchard, 2003), others found no effect of exposure (Barlett et al., 2005; Dens et al., 2009). Similarly, some researchers suggested that viewing images of ideal male models leads to lower state self-esteem (Farquhar and Wasylikiw, 2007), whereas several others found no such effect (Hobza et al., 2007).

One potential limitation of previous studies in this area is the reliance on self-report measures of self-esteem. Self-report measures have a number of limitations. First, participants do not always give truthful answers, as they may want to hide responses that are socially undesirable. This may be especially true for socially charged, personal, and potentially embarrassing issues, which are often in-

cluded in studies relating to body image. Second, even if participants' motivation to tell the truth is high, certain information may not be available to introspection because it is stored in semantic memory in a format that is not consciously accessible (Greenwald and Banaji, 1995). Investigating whether exposure affects such representations requires employing implicit measures of automatic processing. One of the most notable successes in this area is research on intergroup prejudice, which now routinely focuses on subtle, introspectively unidentified biases, such as negative affective responses to racial outgroups (Devine, 1989; Dovidio et al., 2002). Despite being unknown to the participant and not necessarily consistent with their explicit (i.e., self-reported) attitudes, these implicit forms of bias reliably predict behavior, often to a greater extent than do their self-reported counterparts (e.g., Greenwald, Poehlman, Uhlmann, & Banaji, 2009).

Findings relating to self-esteem are similar to those for intergroup attitudes. Research suggests that implicit and explicit measures of self-esteem are at best weakly correlated (Bosson et al., 2000; Olson et al., 2007; Rudman et al., 2001; Spalding and Hardin, 1999) and potentially predictive of different outcomes (Bosson et al., 2000; Spalding and Hardin, 1999). For example, Spalding & Hardin (1999) showed that only implicit self-esteem predicted individuals' non-verbal anxiety during an interview, whereas explicit self-esteem predicted their self-handicapping about the interview. Therefore, in our study we decided to use both explicit and implicit measures of self-esteem in order to reveal a potentially new pattern of results. Explicit measures are likely to reflect conscious beliefs participants have, while implicit measure may be more sensitive to subtle environmental influences such as recently encountered media images.

The inclusion of an implicit measure in the study of effects of exposure to advertising is also noteworthy, because as Want (2009) argues, social comparison processes are often automatic. If so, their consequences might not be revealed through participant self-report, and will thus require measures designed to tap those automatic processes.

Thus, this study has two primary goals. First, we examine whether previously reported findings on the effect of advertisements containing idealized body

portrayals on men's body image extend to racial/ethnic minorities. And second, we test the hypothesis that an implicit measure of self-esteem will be more sensitive to subtle changes brought about by media exposure than will traditional self-report measures.

4.2 Method

4.2.1 Participants

One hundred sixty male undergraduate students (age $M = 19.71$, $SD = 2.02$) from a small U.S. university volunteered to participate in the experiment in exchange for partial credit for their introductory psychology course requirement. Forty-eight were Hispanic (30.0%), 55 Asian (34.4%), and 57 White (35.6%). This distribution reflects this university's diverse student population.

4.2.2 Procedure

After signing a consent form participants were randomly assigned to one of three conditions: experimental condition with female models, experimental condition with male models, or a control condition (no exposure). Students participated individually in three ostensibly unrelated tasks. First, a priming task containing television advertisements was introduced as part of a marketing study of products advertised on television. Participants in the experimental conditions viewed the ads and answered questions relating to them. Men in the control condition viewed no ads. Second, all participants were asked to do a categorization task that investigated how people classify words (Implicit Association Test measuring self-esteem). Third, participants received a 'Health Psychology' questionnaire that was supposedly developed in cooperation with school's health psychology department to study students' mental health. This packet contained all explicit measures. The entire experiment took approximately 25 minutes to complete for men in the experimental conditions and 10 minutes for control participants. An overview of the experimental design of the study is presented in flowchart in Figure 4.1.

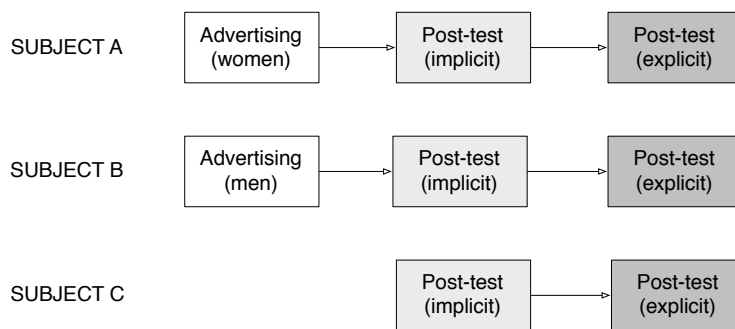


Figure 4.1: Experimental design of the study (between-subjects).

4.3 Materials

4.3.1 Priming task

Participants in the first experimental condition viewed 16 U.S. TV ads of women’s fragrances (e.g., Dior), underwear (e.g., Victoria’s Secret) or beachwear (e.g., Old Navy) which highlighted women’s thin and sexually attractive bodies (see screenshots and pretest results in Appendix B.1). The second experimental condition contained 16 U.S. and Australian TV ads of similar products but for men, each focusing on men’s strong and muscular body (e.g., underwear by AussiBum, fragrances by Hugo Boss, swimwear by Speedo; see Appendix B.2). Ads presented almost exclusively White models. Each ad lasted between 30 and 60 seconds and the overall exposure time in each of the two conditions was approx. 11 minutes. Ads were presented in one order only. To strengthen the cover story of a ‘marketing study of advertising effectiveness’ participants were asked to rate each ad on four criteria (good, likable, enjoyable, attention-getting) using a 7 point Likert scale. In addition, subjects were asked two questions about their buying behavior: Have you ever bought the advertised product? and Would you buy the product based on the ad shown? (adopted from Rudman & Borgida, 1995). Participants in the control condition viewed no ads.

4.3.2 Implicit measure of self-esteem

The Implicit Association Test (IAT; Greenwald, McGhee, & Schwarz, 1998) was used to measure implicit self-esteem. The IAT is a response latency measure of dichotomous categorization, in which participants rapidly classify four kinds of stimuli using just two response buttons. In the present case, participants might press a left response button in response to self-related words and positive adjectives, and a right response button in response to other-related words and negative adjectives. In a second block of trials, the pairings are reversed such that self-related words would now be paired with negative adjectives and other-related words with positive adjectives. The logic of the IAT is that semantically associated categories will be more rapidly categorized when they share a response key. If participants have a positive association with the self, they will be faster when the self-related words share a key with positive adjectives, and slower when they share a key with negative adjectives. By computing an effect size to measure the degree of facilitation during this pairing, we can produce a measure of implicit self-esteem. Thus, the self-esteem IAT consisted of words relating to self (target words: I, me, my, mine, self), other (them, they, their, theirs, others), pleasant (joy, warmth, gold, happy, smile, pleasure), and unpleasant (gloom, agony, pain, stink, filth, death). The self-esteem IAT and all its stimuli were developed by Greenwald et al. (2002), and has now been used in dozens of published studies (e.g., most of the studies included in a recent meta-analysis on implicit components of identity; Cvencek, Greenwald, & Metzliff, in press). As the most widely used measure of implicit cognition, the IAT has certainly garnered its share of controversy. However, its reliability and validity have now been demonstrated in a large number of studies (Greenwald and Nosek, 2001; Greenwald et al., 2005; Greenwald et al., 2006; Lane et al., 2007; Nosek et al., 2005). In addition, it has well-established predictive validity (Greenwald et al., 2009), routinely predicting behavior with greater power than self-report measures, especially in more charged domains such as stereotyping or prejudice. Thus, we anticipated that implicit self-esteem would provide us with an interesting independent window into the effects of media exposure.

In our study we used a standard five-block IAT and employed the revised

scoring algorithm validated with large data sets (Greenwald et al., 2003). This scoring procedure produces an effect size measure for each participant, the IAT D , with positive values representing positive implicit self-esteem.

4.3.3 Explicit measures

Self-esteem

Three procedures to measure explicit self-esteem were administered: a feeling thermometer (sliding scale), a standard self-esteem inventory - Rosenberg's (1965) Self-Esteem Scale (RSES), and a Likert-like rating scale. First, participants were asked to mark how warmly/favorably they feel about *themselves* and about *other people* by placing a horizontal mark on the feeling thermometer that had three anchors: 0 (*cold/unfavorable*), 50 (*neutral*) and 100 (*warm/favorable*). The final score was achieved by subtracting the temperature for the *other people* from that of *oneself* (see Appendix A.3). Next, we used Rosenberg's (1965) self-esteem questionnaire that includes 5 positive and 5 negative self-descriptive statements. We added additional 4 items to the original scale which were statements about one's health (e.g., *I think I exercise enough every week*, or *I am concerned about my health*), in order to motivate participants to believe the questionnaire was related to Health Psychology (see Appendix A.4). Participants were asked to report how much they agree with each of the 14 statements on a 4-point Likert scale (1 - *strongly agree*, 4 - *strongly disagree*). The sum of the ratings assigned to the 10 original items (excluding 4 health-related items), after reverse scoring the positively worded items, indicated one's self-esteem level. Scores ranged from 0 to 30; higher scores indicating higher self-esteem. Finally, the Likert-like scale questionnaire consisted of 6 unpleasant-meaning and 6 pleasant-meaning words previously appearing in the implicit self-esteem IAT (e.g., gold, happy, pain, death). This questionnaire was developed by Greenwald et al. (2002). Participants rated how characteristic of them each of these words was on a 7-point Likert scale (anchors 1 - *not at all characteristic of you* and 7 - *extremely characteristic of you*; see Appendix A.5)). The final score was constructed by subtracting the average score for the unpleasant words from that for the average for pleasant words. The scores

obtained using these three procedures were planned to be combined into one index of explicit self-esteem following previous research that suggest their high inter-correlations (Greenwald et al., 2002; Olson et al., 2007). The advantage of using three procedures to measure explicit self-esteem (Greenwald et al., 2002) is the creation of one explicit self-esteem index which tackles various aspects of self-esteem corresponding to different measures.

Actual-ideal body discrepancy

Actual-ideal body discrepancy was measured using a Pictorial Body Image Scale (Stunkard et al., 1983). The scale consists of 9 drawings of men's figures ranging from extremely thin to extremely heavy presented in a horizontal row (see Appendix A.2). Participants were asked to answer the following four questions: (1) Which drawing looks most like your own figure? (actual body image), (2) Which figure do you most want to look like? (own body ideal), (3) Which figure do you think most men want to look like? (own sex ideal body), (4) Which figure do you think most women find most attractive? (opposite sex body ideal) (after Cohn & Adler, 1992). The three ideal body image variables (all but the first variable) were expected to correlate highly, as shown by Lavine et al. (1999), and were planned to be converted into one composite measure of ideal body size. Construct validity and reliability of this measure is well established (Banasiak et al., 2001; Wertheim et al., 2004).

Next, we calculated men's actual-ideal discrepancy score by subtracting participants' composite ideal body image (average of the last three questions) from their actual body image. Positive scores indicate that one's actual body image is larger than a desired body image, while negative scores indicate that one is thinner or less muscular than desired (after Lavine, Sweeney, & Wagner, 1999).

Some authors (e.g., Lavine et al., 1999) consider positive discrepancy scores as synonymous with body dissatisfaction. However, we argue that perception of difference between own and ideal bodies does not necessarily imply dissatisfaction. One can notice the difference and still be satisfied with one's own looks and body image. Therefore, we avoid referring to this discrepancy as 'body dissatisfaction'.

Perception of health risks

Two questions were asked to measure men's perception of weight-related health risks: (1) Which figure do you think depicts a health-risk posed by being too skinny? (risk of anorexia nervosa), Which figure do you think depicts a health-risk posed by being too heavy? (risk of obesity). We included this measure to test whether men's body ideals differ across race/ethnicity. Participants used the above Pictorial Body Image Scale to indicate their responses. Each participant's final score was obtained by subtracting a score reflecting a health-risk posed by being too skinny from a score reflecting a health-risk posed by being too heavy. The resulting composite score indicates a perceived range of healthy body sizes.

4.4 Results

4.4.1 Data reduction

Following the revised scoring algorithm for the IAT (Greenwald et al., 2003) mentioned above, we excluded 7 men who had too many short responses ($< 300ms$), indicative of hitting the keys without having enough time to consciously categorize the stimuli (i.e., task disengagement). Therefore, the final sample included 153 men (attrition 4.4%).

4.4.2 Creating indices

Correlations among the different measures of explicit and implicit self-esteem were computed. As presented in Table 4.1, only two of the explicit measures correlated with each other, the Rosenberg Scale of Self-Esteem (RSES) and the Likert-like rating scale. The feeling thermometer did not correlate with any of the other two explicit measures. Given the strong correlation between two of the explicit measures of self-esteem (RSES and Likert), we standardized and averaged them to produce an index of explicit self-esteem; a reliability analysis indicated moderate reliability for this measure (Standardized item $\alpha = .78$). Due to its poor correlation with the other measures, we excluded the feeling thermometer

from this index and used it separately in what follows. In contrast to previous studies (Bosson et al., 2000; Spalding and Hardin, 1999) which showed that the implicit (IAT) and explicit measures of self-esteem were uncorrelated, we found a weak correlation between the implicit self-esteem (IAT) scores and the Likert-like scale ($r = .23, N = 148, p < .01$), as well as the new explicit self-esteem index ($r = .20, N = 148, p < .05$).

Table 4.1: Zero-order correlations between explicit and implicit measures of self-esteem.

<i>Measure</i>	IAT	RSES	Feeling thermometer	Likert-like scale
IAT	-	.12	.08	.23**
RSES		-	-.01	.64***
Feeling thermometer			-	.06
Likert-like scale				-

Note. IAT - Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998), RSES - Rosenberg (1965) Self-Esteem Scale.
Basis: 148 men (listwise deletion).
** $p < .01$, *** $p < .001$ (Pearson).

In addition, we created an ideal body size index by standardizing and averaging the following measures of body ideal: own ideal body size, other men's ideal body size and women's ideal of men's body size (Standardized item $\alpha = .78$). All three measures of body ideal correlated moderately with each other ($.46 < r < .59, N = 153, p < 0.001$).

4.4.3 Descriptive statistics

On average, men in our sample had a positive implicit ($M = .61, SD = .31$) and explicit self-esteem ($M = 2.67, SD = .91$). *T*-test analyses showed that the implicit ($t(151) = 23.94, p < .001$) as well as three explicit measures of self-esteem (RSES $t(152) = 13.60, p < .001$; feeling thermometer $t(149) = -2.35, p < .05$; Likert $t(151) = 21.27, p < .001$) were different from their rational midpoints. Men's average reported body size was a bit larger than figure no. 4 ($M = 4.58, SD = 1.37$) and their average body ideal was thinner by approx. half a body size ($M = 4.16, SD = .68$). The average actual-ideal body discrepancy was .43

($SD = 1.47$). Men considered on average 6.02 ($SD = 1.57$) body sizes as free from weight-related health risks.

In order to compare the scores of all of the outcome variables across different racial /ethnic groups, we conducted one-way between-subjects ANOVAs with race/ethnicity as an independent factor. There was no significant effect of race/ethnicity on men's implicit self-esteem ($F(2, 149) = .26, p > .10$), explicit self-esteem measured using the feeling thermometer ($F(2, 147) = .58, p > .10$) perception of own body size ($F(2, 150) = 1.38, p > .10$), ideal body size ($F(2, 150) = 1.77, p > .10$), or actual-ideal body discrepancy ($F(2, 150) = .55, p > .10$). However, we found that men's explicit self-esteem (index $F(2, 150) = 7.64, p < .01$) and the range of body sizes considered free from weight-related health risks ($F(2, 150) = 7.73, p < .01$) differed significantly by race/ethnicity. Post hoc comparisons (Tukey

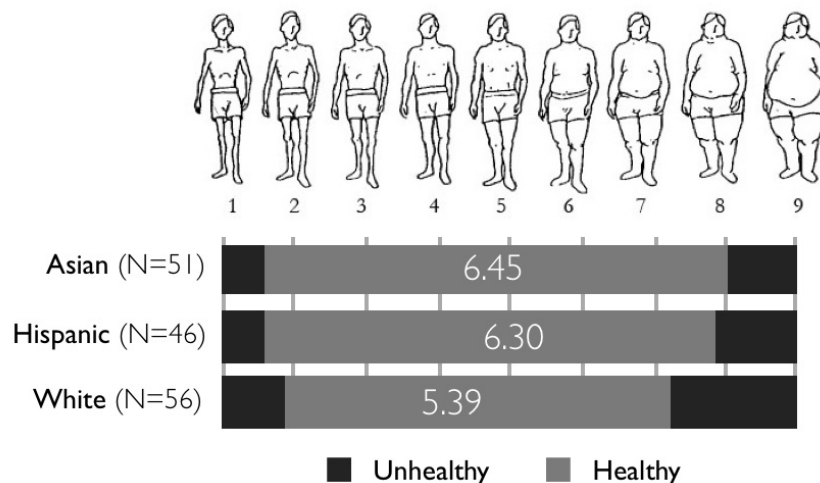


Figure 4.2: Men's perception of healthy body sizes across race/ethnicity (predicted means). *Note:* The range of bodies perceived as free from weight-related health risks for White men is significantly smaller than the range perceived by Asian ($p < .01$) and Hispanic men ($p < .01$). The perceived range of healthy bodies by Asian men is not statistically different from the one of Hispanic men ($p > .10$).

HSD) indicated that the mean explicit self-esteem for Asian men ($M = 2.30, SD = .89$) was significantly lower than the one of Hispanic ($M = 2.75, SD = .85$) and White men ($M = 2.95, SD = .90$), who did not differ from one another. Post

hoc comparison for weight-related health risks revealed that the range of body sizes considered free from health risks by White men ($M = 5.39$, $SD = 1.46$) was significantly smaller than the range perceived by Asian ($M = 6.45$, $SD = 1.50$) and Hispanic men ($M = 6.30$, $SD = 1.57$), who did not differ (Figure 4.2).

4.4.4 Main effects of media exposure

One-way between-subjects ANOVAs with condition as the independent factor were conducted to compare the effect of exposure on implicit and explicit self-esteem, actual-ideal body discrepancy and perception of health risks. There was a marginal effect of exposure condition on men's implicit self-esteem ($F(2, 149) = 2.99$, $p = .053$). Post hoc comparisons (Tukey HSD) indicated that the mean implicit self-esteem for men in the female ads condition ($M = .69$, $SD = .31$) was significantly higher ($p < .05$) than the implicit self-esteem of men in the control condition ($M = .55$, $SD = .34$). The male ads condition ($M = .59$, $SD = .27$) did not significantly differ ($p > .10$) from either the control or female ads conditions. There were no significant differences across the three con-

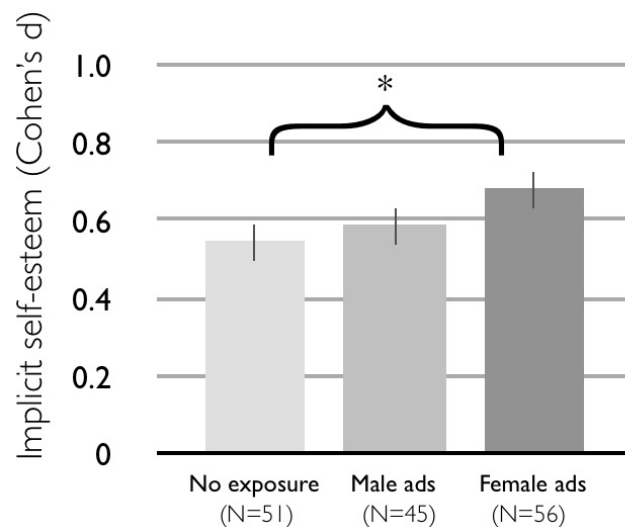


Figure 4.3: Effect of exposure to male and female advertisements on men's implicit self-esteem (predicted means). *Note:* $*p < .05$, error bars represent $1SE$.

ditions in men's explicit self-esteem (index $F(2, 150) = .83$, $p > .10$; feeling ther-

mometer $F(2, 147) = .126, p > .10$) and perception of weight-related health risks ($F(2, 150) = .15, p > .10$). These findings confirmed our hypothesis that implicit measures of self-esteem can reveal new information, in this case a stronger pattern of exposure effects than explicit self-esteem (see Figure 4.3).

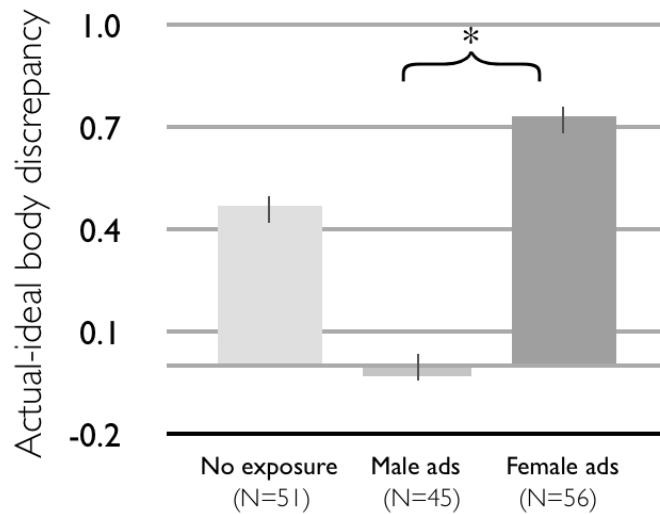


Figure 4.4: Effect of exposure to male and female advertisements on men’s actual-ideal body discrepancy (predicted means). *Note:* $*p < .05$, error bars represent $1SE$.

Moreover, we found a significant effect of exposure condition on men’s actual-ideal body discrepancy ($F(2, 150) = 3.48, p < .05$), see Figure 4.4. Post hoc comparisons (Tukey HSD) for men’s actual-ideal body discrepancy revealed that the mean body discrepancy of men in the male ads condition ($M = -.02, SD = 1.45$) was significantly lower than that of men in the female ads condition ($M = .74, SD = 1.39$) ($p < .05$), indicating that men exposed to male ads saw themselves as closer to their body ideal. Because the two experimental conditions did not significantly differ ($p > .10$) from the control condition ($M = .48, SD = 1.51$), we examined these effects more closely by conducting one-sample t -tests examining the mean body discrepancy score for men in each condition. Mean discrepancy scores were significantly different from 0 in the female ($t(55) = 3.96, p < .001$) and no ads ($t(51) = 2.31, p < .05$) conditions, but

not in the male ads condition ($t(44) = -.10, p > .10$); thus, exposure to male ads eliminated body discrepancy.

4.4.5 Interactions between exposure and race/ethnicity

For each of the dependent measures, we conducted separate one-way between-subjects ANOVAs with two independent factors: 3 (exposure condition: no ads, female ads, male ads) x 3 (race/ethnicity: Asian, Hispanic, White). These analyses revealed a significant condition by race/ethnicity interaction for men's implicit self-esteem ($F(4, 143) = 2.56, p < .05$). As depicted in Figure 4.5, the mean im-

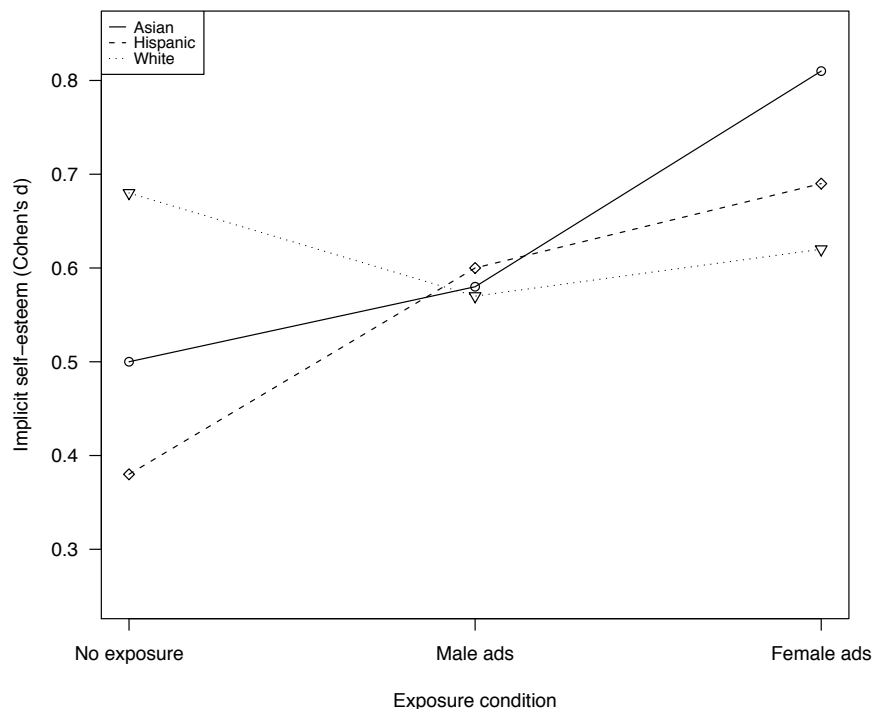


Figure 4.5: Exposure condition by race/ethnicity interaction on men's implicit self-esteem (predicted means).

PLICIT self-esteem of Asian ($M = .58, SD = .33$) and Hispanic men ($M = .60, SD = .25$) who viewed male ads was higher than when they viewed no ads

(Asian men $M = .50$, $SD = .31$; Hispanic men $M = .38$, $SD = .39$) and even higher after viewing female ads (Asian men $M = .81$, $SD = .26$; Hispanic men $M = .69$, $SD = .25$). There seemed to be no differences across conditions for White men. To further examine this pattern of results additional ANOVAs with implicit self-esteem as the dependent variable and exposure condition as an independent factor were conducted separately for each racial/ethnic group. The results confirmed the previous analysis showing that exposure had a significant effect on the implicit self-esteem of Asian ($F(2, 48) = 4.00, p < .05$) and Hispanic men ($F(2, 42) = 4.03, p < .05$) but no effect on White men ($F(2, 53) = .53, p > .10$). Post-hoc analyses indicated a significant difference ($p < .05$) between the female ads and control conditions in both Asian and Hispanic men. Mean implicit self-esteem of ethnic-minority men in the male ads conditions did not differ from the female ads or the control condition ($p > .10$). No significant differences in implicit self-esteem of White men were found between any of the exposure conditions ($p > .10$).

We found no condition and race/ethnicity interaction for men's explicit self-esteem (index $F(4, 144) = .63, p > .10$; feeling thermometer $F(4, 141) = .81, p > .10$), actual-ideal body discrepancy ($F(4, 144) = .71, p > .10$) or perception of weight-related health risks ($F(4, 144) = .61, p > .10$). Taken together, these results suggest that ethnic differences in exposure effects are present, but only for *implicit* self-esteem.

4.5 Discussion

This study showed that, in general, exposure to idealized images of women in advertising improved men's implicit, but not explicit, self-esteem. This result was found in Asian and Hispanic, but not White American men. The difference in the effects on implicit versus explicit self-esteem suggests that implicit measures might be more sensitive to short term, subtle effects on self-esteem than explicit measures (Greenwald et al., 2002), and suggests they should be employed more widely in future media exposure research.

The fact that exposure to idealized images of women increased men's implicit self-esteem suggests that viewing advertisements of women can have self-enhancing effects on men. While establishing a definite mechanism underlying this effect must await further research, we would argue that these ads activate a concept of a female sex object. This could bolster self-esteem if men engage in an explicit or implicit fantasy of being with the target, an outcome that would likely be self-enhancing given the high desirability of the pictured women.

In contrast with the female portrayals, viewing advertisements with attractive and muscular men did not produce any effect on men's implicit self-esteem. This suggests that men are not engaging in upward comparisons with these idealized images.

More importantly, this study found that change in men's implicit self-esteem in different exposure conditions depends on their race/ethnicity. Viewing attractive female models in advertisements *increased* implicit self-esteem of Hispanic and Asian men; whereas among White men, on the contrary, viewing both attractive women and muscular models *did not have any effect* on their implicit self-esteem. Thus, the ethnic differences demonstrated by this study are such that advertising (portraying idealized, primarily White women) seems to have a more pronounced self-enhancing effect on non-White men. One explanation for this finding is that Asian and Hispanic men in our sample were more uniformly optimistic about becoming a potential partner for the female models, or conversely were less likely to feel threatened by the idealized partners, while White participants experienced a wider range of consequences leading to no mean-level exposure effect. It could also be that since we presented mostly White women in the selected advertisements, this was a novel fantasy for Asian and Hispanic men, and therefore it produced more self-enhancement; this would suggest that images of non-White women might have a larger effect on White males.

With regard to men's actual-ideal body discrepancy, Asian, Hispanic, and White men were similarly affected by exposure: Men who viewed male portrayals in ads reported a significantly lower discrepancy between their actual and ideal body size than did men who viewed female portrayals. In fact, on average men's

discrepancy score in the male ads condition did not differ from zero, suggesting a lack of discrepancy between men's perceived own body size and their ideal. This is again consistent with the possibility that exposure had self-enhancing effects, this time by closing the gap between men's perceptions of their actual and ideal bodies. It may be that exposure to both female and male ads leads to a 'fantasy effect', but the nature of the effects differ: While female ads lead to bolstered self-esteem through imagining the self with an attractive female, male ads bolster body image through assimilating the self to a body ideal.

In addition to demonstrating ethnic differences in exposure effects, we showed racial/ethnic differences in men's perception of weight-related health risks. White men considered the narrowest range of body sizes to be free from the risk of weight-related problems, like anorexia, obesity or diabetes. Asian and Hispanic men marked a range larger by an additional body size or more, especially at the extremely heavy end of the scale. This parallels results found in women (Chapter 3). The fact that only White men and women consider the narrowest range of body sizes to be free from such risk raises the possibility that Asian and Hispanic individuals might be less aware of the potential health problems associated with the extreme ends of the scale. This racial/ethnic difference in perception of health risks may have important implications for rising rates of obesity in Asian and Hispanic men and women (Davis et al., 2004; Flegal et al., 1998). The importance of this finding lies also in the relationship between different concepts of body ideal. When we asked men explicitly to indicate their ideal body size we found no differences across race/ethnicity. On average, men from all ethnic groups selected a body size slightly larger than no. 4. However, when we asked which bodies are free from health-risks posed by being too skinny or too heavy, we recorded differences in men's acceptance of different body sizes (Hispanic and Asian men accepted slightly more skinny men and especially more heavy men than did White men). On the one hand, these results suggest that all men have internalized the same mainstream ideal. On the other, these same ideals at the mean level mask variation in the range of what is considered acceptable in different cultural groups. Measuring men's perception of weight-related health risks could be a less direct and

more concrete way of asking about men's body ideals in a way that circumvents reliance on a single internalized ideal.

We acknowledge one major limitation in the current approach. This experiment used realistic advertisements in order to study effects as close as possible to men's media experiences outside of the lab. However, this means that our sample of advertisements most likely confounded the concepts of thinness or muscularity with physical attractiveness, a limitation of many previous studies (Grabe et al., 2008). It is not absolutely clear whether the effects of exposure are brought about by advertising models having an ideal body size (i.e., thin or muscular), having an ideal body size and being attractive, or only being attractive. Prior research exposing women to images of fashion models with control conditions employing images of more realistic or average-looking women (Dittmar and Howard, 2004; Halliwell and Dittmar, 2004; Halliwell et al., 2005), or overweight women (Crouch and Degelman, 1998; Smeesters and Mandel, 2006), found that only the effects of exposure to fashion models were negative. But the body size and attractiveness dilemma still remains unresolved in those studies, as different women are shown in different conditions. Therefore, the best way around this is the investigation of exposure effects using artificially created control advertisements, for instance, using the same advertisement model stretched to be in a few different body sizes (either achieved with the help of computer software or different monitors). A few studies employed this strategy (Clay et al., 2005; Monro and Huon, 2006) but have not reached concrete conclusions regarding the impact of weight versus attractiveness. Therefore, further investigations of the relationship between these two aspects of men's and women's portrayals are needed.

4.6 Conclusion

The current study has important implications for research on the effects of exposure to idealized bodies on men's self image. We found that viewing muscular and attractive men in advertisements can have self-enhancing effects on the way men perceive their own body, largely eliminating the body discrepancies otherwise

experienced. In addition, we found that exposure to idealized women has a different form of self-enhancing effect, this time on men's implicit (but not explicit) self-esteem. This finding prompts us to recommend employing implicit measures in future research, as they may be more sensitive - or differentially sensitive - to the subtle effects of mass media exposure. At the broader level, our results suggest that advertising exposure does not always have negative effects (Barlett et al., 2008; Grabe et al., 2008); indeed, it can elicit self-enhancing effects, which may be one part of the appeal that media images has for viewers.

Critically, this experiment is the first investigation of exposure effects in an ethnically diverse sample, and indeed our findings suggest that media exposure may be less harmful across these more diverse populations. Our findings revealed that Asian and Hispanic, but not White American men, experienced self-enhancement following exposure to female advertisements. We interpret this as evidence of a 'fantasy effect' in this population, but further work is necessary to clarify the mechanism driving it. This study also found that men's racial/ethnic background matters for their perception of healthy body sizes. This finding may be helpful in designing targeted interventions and media campaigns focusing on ethnic-minority women suffering from eating disorders. We look forward to further investigations of the way in which ethnically diverse men react to media portrayals of men and women, as well as of the new patterns of results revealed by the use of implicit methods.

Part IV

Personality & self image

Introduction to Part IV

The central theme of Part IV is the investigation of the relationship between self image and *personality traits*. Even though a number of moderating factors of the exposure effects on self and body image have been studied (see Chapter 2), personality traits are an important personal moderator that has been neglected in prior research. In Chapter 5, we reported a correlational pilot study investigating the relationships between personality traits and a range of self and body image related measures. This study was motivated by the idea that if personality correlates with any of body dissatisfaction, body esteem, and similar measures, it will be worth including this variable as a moderator in following experimental studies. Chapter 6 is based on a path analysis which showed that the relationship between personality and body dissatisfaction is not a *direct* one but mediated by self-esteem. Internalization of sociocultural ideals was an additional mediator of the relationship between self-esteem and body dissatisfaction in women. Finally, in Chapter 7, we reported an experimental study which was aimed at testing new measures and new moderators (see Figure 4.6). We investigated the effects of exposure to idealized female bodies in TV advertising on implicit body perception and body esteem. In addition to personality traits, we included two further potentially moderating variables, Body Mass Index (BMI) and comparison tendency.

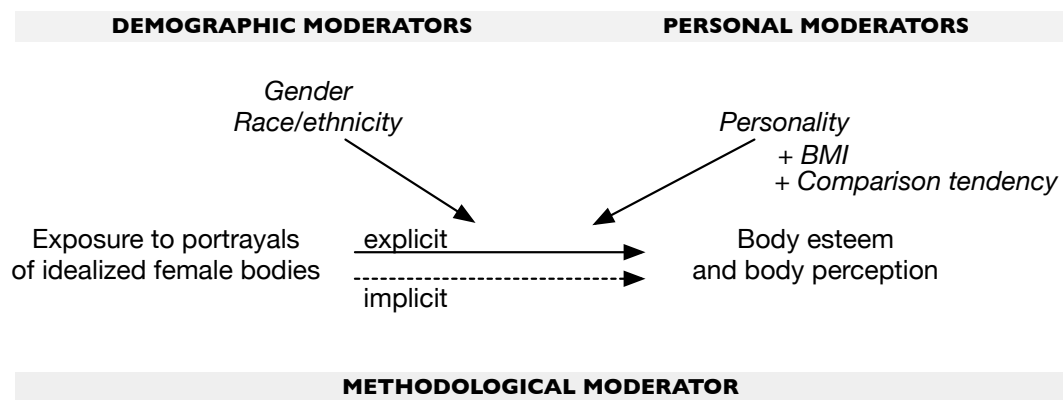


Figure 4.6: Overview of the experimental design of study reported in Chapter 7 highlighting its major contributions.

Chapter 5

Personality and self image: Setting the stage

5.1 Introduction

Just as with race/ethnicity, very little is known about personality and its role in shaping one's self image. As stated in the Introduction (Part I), we discussed whether personality traits play a moderating role of the exposure to thinness on one's self image and related measures (RQ 4). The answer to this research question requires an experimental investigation, yet, first we conducted a correlational pilot study to see whether any relationships exist between personality traits and self image related measures. We hypothesized that personality traits, neuroticism (aka emotional stability) and extraversion in particular, will moderate the effects of media exposure.

5.2 Method

5.2.1 Participants

Two hundred and twelve undergraduate women and 175 men (age $M = 19.23$, $SD = 1.88$) from a small U.S. university participated in the study in exchange for credit for their introductory psychology course requirement. One hun-

dred thirty four participants were Hispanic/Latino (34.6%), 98 were White (25.3%), 92 Asian (23.8%), 24 African American (6.2%), and 39 used another ethnic identification (10.1%).

5.2.2 Procedure

Participants signed up for one of the two order conditions of the study (two for each gender) using the university's online recruitment system. Upon signing up they received a link to an online survey and completed it individually in a non-laboratory setting. The study took less than 30 minutes to complete.

5.3 Materials

5.3.1 Explicit measures

Self and body image related concepts were measured using a variety of instruments. First, we used a 9-item body dissatisfaction subscale of the Eating Disorder Inventory (Garner et al., 1983), in which participants were asked to answer how often they experience dissatisfaction with their body parts including stomach, thighs, or buttocks (see Appendix A.6). Their answers were summed up into one score reflecting body dissatisfaction. Another measure of body dissatisfaction, available for women only, was the Body Shape Questionnaire (BSQ) that contained 34 questions about feelings and attitudes towards own body (Cooper et al., 1987). Female participants answered by indicating how often in the past 4 weeks they experienced any of the situations described (see Appendix A.7), for instance: 'Has eating even a small amount of food made you feel fat?' or 'Have you pinched areas of your body to see how much fat there is?'. Similarly to the above measure, the final score was built by summing up all responses. The third measure, Body Esteem Scale (BES, Franzoi and Shields, 1984) required participants to report how positively or negatively they felt towards 35 body parts and functions (e.g., lips, hips, body scent, agility; see Appendix A.8). The sum of all ratings reflected their body esteem. In addition to the overall body esteem, we distinguished

between three sub-scales (based on a factor analysis by Franzoi and Shields, 1984); for women - Weight Concern (WC), Sexual Attractiveness (SA), and Physical Condition (PC), for men - Upper Body Strength (UBS), Physical Attractiveness (PA), and Physical Condition (PC) (Franzoi and Shields, 1984). Finally, the Pictorial Body Image Scale (Stunkard et al., 1983), described in detail in Chapter 3 (see Appendix A.2), was used to measure participants' self body-discrepancies. Rosenberg Self Esteem Scale (Rosenberg, 1965), also used in previous studies (Chapters 3 and 4), was used to measure trait self-esteem (see Appendix A.4).

We measured personality traits on five commonly used dimensions, the so-called 'Big Five', by administering the Ten-Item Personality Inventory (TIPI; Gosling, et al., 2003). In this questionnaire, participants were to indicate how strongly they associate ten pairs of characteristics with the self, for instance, 'extraverted, enthusiastic' or 'calm, emotionally stable' (see Appendix A.11). Two pairs of adjectives corresponded to each personality dimension of the 'Big-Five' factor model (agreeableness, openness, extraversion, conscientiousness, emotional stability). To arrive at the score for each personality trait an average rating for each pair of adjectives was calculated.

In addition, we included three potential moderators of media exposure effects: awareness of the thinness ideal, its internalization, and a tendency to compare oneself to media models (see Chapter 2). First, we included a 35-item questionnaire measuring participants' awareness and internalization of the sociocultural ideals (Sociocultural Attitudes Towards Appearance Questionnaire - SATAQ; Cusumano and Thompsom, 1997). These two constructs are considered separate and do not correlate with each other (Heinberg et al., 1995). Participants were asked to answer questions like 'I believe clothes look better on thin models' (internalization item) or 'In today's society, it's not important to always look attractive' (awareness item, see Appendix A.10). Second, participants were asked about their tendency to compare themselves to media models using a Comparison to Models Survey (Strowman, 1996; see Appendix A.9).¹ For a detailed overview of the scor-

¹These three moderators are not my major research interests and therefore were not included as separate research questions. However, because of results in prior research we will include them in my studies as control variables.

ing of all above measures see Appendix A.1. For a complete graph of all constructs including measures see Figure 5.1.

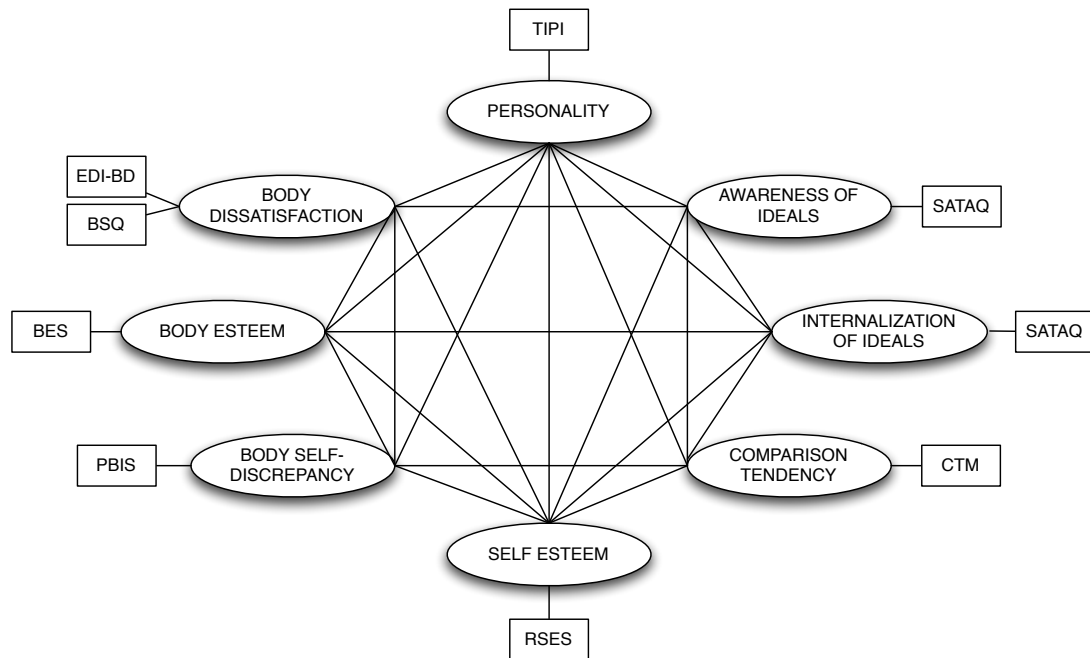


Figure 5.1: Complete graph of constructs measured in the study.

5.4 Results

5.4.1 Factor analysis

We conducted a factor analysis of the Body Esteem Scale (BES) to confirm the factors suggested by Franzoi and Shields (1984). The results of the analysis were satisfactory; obtained factors were very similar to the factors suggested by the authors of this measure (Franzoi and Shields, 1984).²

²Tables with detailed results of the factor analyses can be obtained upon request.

5.4.2 Descriptive statistics

Independent samples *t*-tests revealed that several self image and personality variables differed significantly across gender. In this study, women were on average significantly more extraverted ($t(385) = 2.39, p < .05$), more agreeable ($t(385) = 4.03, p < .001$), more open to experience ($t(385) = 3.41, p < .01$), more conscientious ($t(385) = 5.31, p < .001$), and less emotionally stable ($t(385) = -2.21, p < .05$) than men (see Table 5.1).³ Moreover, as compared to men, women reported a significantly lower body esteem ($t(385) = -4.25, p < .001$), higher body dissatisfaction ($t(385) = 3.72, p < .001$), and a greater self-other body discrepancy ($t(385) = 7.61, p < .001$). Women also reported a greater comparison tendency ($t(385) = 2.67, p < .01$) and greater internalization of sociocultural ideals ($t(385) = 4.36, p < .001$) than men. There were no gender differences in

Table 5.1: Observed means (with standard deviations) of all study variables in men and women.

	<i>Women</i>	<i>Men</i>	<i>Total</i>
	Mean (SD)	Mean (SD)	Mean (SD)
Extraversion (TIPI)*	4.62 (1.35)	4.29 (1.32)	4.47 (1.34)
Agreeableness (TIPI)***	4.95 (1.03)	4.53 (1.03)	4.76 (1.05)
Openness (TIPI)**	5.48 (1.00)	5.11 (1.08)	5.31 (1.05)
Conscientiousness (TIPI)***	5.38 (1.16)	4.72 (1.28)	5.08 (1.25)
Emotional stability (TIPI)*	4.56 (1.26)	4.84 (1.19)	4.68 (1.24)
Body Esteem (BES)***	114.87 (21.94)	124.60 (22.99)	119.27 (22.91)
Body dissatisfaction (EDI-BD)***	8.86 (6.78)	6.49 (5.54)	7.78 (6.36)
Actual-ideal discrepancy (PBIS)***	1.14 (1.32)	.08 (1.40)	0.66 (1.45)
Comparison to models (CTM)**	19.74 (7.38)	17.69 (7.66)	18.81 (7.56)
Awareness (SATAQ)	35.30 (5.56)	34.95 (5.32)	35.14 (5.45)
Internalization (SATAQ)***	37.13 (7.96)	33.78 (6.97)	35.62 (7.70)
Self-esteem (RSES)	20.22 (4.78)	20.64 (5.43)	20.41 (5.08)

Note. BES - Body Esteem Scale (Franzoi and Shields, 1984), BSQ - Body Shape Questionnaire (Cooper et al., 1987), CTM - Comparison to Models (Strowman, 1996), EDI-BD - Body Dissatisfaction subscale of the Eating Disorder Inventory (Garner et al., 1983), PBIS - Pictorial Body Image Scale (Stunkard et al., 1983), RSES - Rosenberg Self-Esteem Scale (Rosenberg, 1965), SATAQ - Sociocultural Attitudes Towards Appearance Questionnaire (Cusumano and Thomspson, 1997), TIPI - Ten Item Personality Inventory (Gosling, et al., 2003).

Basis: $N = 387$ (212 women; 175 men).
 * $p < .05$, ** $p < .01$, *** $p < .001$ (*t*-test).

³This data corresponded to the personality traits norms reported by Gosling et al. (2003).

participants' awareness of sociocultural ideals ($t(385) = .61, p > .10$) and explicit self-esteem ($t(385) = -.80, p > .10$).

Seven variables were specific to one gender only. The BSQ scale is designed for women only, whereas the 6 subscales of the BES are based on different items for men and women and therefore are not comparable across gender (Franzoi and Shields, 1984). In women, the average weight concern (BES subscale) was equal to 32.51 ($SD = 8.76$), sexual attractiveness to 46.05 ($SD = 7.88$), and physical condition to 31.10 ($SD = 6.66$). Women's average body dissatisfaction as measured by the BSQ was 105.59 ($SD = 39.03$). In men, average upper body strength was 30.48 ($SD = 6.71$), physical attractiveness was 38.52 ($SD = 6.84$), and physical condition was 43.52 ($SD = 10.16$).

There were no order effects for men and women for any of the variables.

5.4.3 Correlations

Due to the fact that we found significant gender differences across multiple self image and personality variables, we present all correlations separately for men and women.

The results of the survey showed that in women *emotional stability* correlates significantly with a number of self- and body image related measures (see Table 5.2). We found a weak positive correlation between emotional stability and overall body esteem ($r = .20, p < .01$), weight concern ($r = .18, p < .01$), physical condition ($r = .31, p < .001$), and self-esteem ($r = .35, p < .001$). There was a weak negative correlation between emotional stability and body dissatisfaction (EDI-BD $r = -.16, p < .05$), internalization of the sociocultural ideals ($r = -.13, p < .05$), and comparison tendency ($r = -.15, p < .05$). The more neurotic women were (or less emotionally stable), the more they have internalized the sociocultural ideals and tended to compare themselves to media models; the lower was their self-esteem; the higher was their body dissatisfaction and the more negative were their feelings about their weight and physical condition. Overall, these results illustrated that less emotionally stable women tend to internalize the sociocultural ideals to a greater extent, have a greater comparison tendency, and

are less satisfied with their body and the self. We did not find a correlation between emotional stability and actual-ideal body discrepancy, body dissatisfaction (measured using BSQ; Cooper et al., 1987), feelings about own sexual attractiveness, and awareness of the thinness ideal. None of the remaining personality traits were correlated with any of the body dissatisfaction measures. They were, however, correlated with body esteem, self-esteem, and comparison tendency to a similar extent as emotional stability was.

There was a weak positive correlation between *extraversion* and overall body esteem ($r = .24, p < .001$), all three body esteem subscales (weight concern $r = .18, p < .01$; sexual attractiveness $r = .21, p < .01$; physical condition $r = .21, p < .01$), and self-esteem ($r = .34, p < .001$). Extraversion was also negatively correlated with comparison tendency ($r = -.14, p < .05$). The more extraverted women were, the less they tended to compare themselves to media models, the more positive were their feelings towards own weight, sexual attractiveness, and physical condition, and the higher was their self-esteem.

Another personality trait which correlated positively with the overall body esteem and all of its subscales was openness (overall body esteem $r = .21, p < .01$; weight concern $r = .18, p < .05$; sexual attractiveness $r = .21, p < .01$; physical condition $r = .20, p < .01$). Conscientiousness was positively related only to the overall body esteem ($r = .15, p < .01$). Both of the above traits, as well as agreeableness, were positively correlated with self-esteem ($.16 \leq r \leq .22, p < .05$).

Table 5.2: Zero-order correlations between women's personality traits and self image variables.

	Extr.	Agree.	Open.	Consc.	Stab.	BES	WC	SA	PC	BSQ	EDI	PBIS	CTM	Aware.	Int.	RSES
Extr.	-															
Agree.		-														
Open.			-													
Consc.				-												
Stab.					-											
BES						-										
WC							-									
SA								-								
PC									-							
BSQ										-						
EDI-BD											-					
PBIS												-				
CTM													-			
Aware.														-		
Int.															-	
RSES																-

Note. - Agreeableness subscale derived from the Ten Item Personality Inventory (TIPI; Gosling, et al., 2003); Aware. - Awareness subscale of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ; Cusumano and Thomspon, 1997); BES - Overall body esteem (BES; Franzoi and Shields, 1984); BSQ - Body Shape Questionnaire (Cooper et al., 1987); Consc. - Conscientiousness (TIPI; Gosling, et al., 2003); CTM - Comparison to Models (Strowman, 1996); EDI-BD - Body Dissatisfaction subscale of the Eating Disorder Inventory (Garner et al., 1983); Extr. - Extraversion (TIPI; Gosling, et al., 2003); Int. - Internalization subscale of the SATAQ (Cusumano and Thomspon, 1997); Open. - Openness (TIPI; Gosling, et al., 2003); PBIS - Pictorial Body Image Scale measuring actual-ideal body discrepancy (Stunkard et al., 1983); PC - Physical Condition subscale of the Body Esteem Scale (BES; Franzoi and Shields, 1984); RSES - Rosenberg Self-Esteem Scale (Rosenberg, 1965); SA - Sexual Attractiveness subscale of the BES (Franzoi and Shields, 1984); Stab. - Emotional Stability (TIPI; Gosling, et al., 2003); WC - Weight Concern subscale of the BES (Franzoi and Shields, 1984).

Basis: $n = 212$ women.
 $*p < .05$, $**p < .01$, $***p < .001$ (Pearson).

In men, similarly to women, *emotional stability* correlated positively with the overall body esteem ($r = .33, p < .001$), all three body esteem sub-scales (upper body strength $r = .33, p < .001$), physical attractiveness $r = .28, p < .001$), physical condition $r = .35, p < .001$), and with self-esteem ($r = .38, p < .001$). The less emotionally stable (or more neurotic) men were, the more negative were their feelings about their upper body strength, physical condition, attractiveness, and the self.

Extraversion also had a positive relationship with men's overall body esteem ($r = .34, p < .001$), its subscales (upper body strength $r = .28, p < .001$; physical attractiveness $r = .31, p < .001$; physical condition $r = .33, p < .001$), and self-esteem ($r = .40, p < .001$). The more extraverted men were, the more positive were their feelings towards their bodies and the self.

The only personality trait that correlated with body dissatisfaction was *conscientiousness* ($r = -.22, p < .01$). This personality trait was also positively correlated with men's overall body esteem ($r = .24, p < .01$), all of its subscales (upper body strength $r = .15, p < .05$; physical attractiveness $r = .28, p < .001$; physical condition $r = .24, p < .001$), and self-esteem ($r = .34, p < .001$). Openness was also positively correlated with the overall body esteem ($r = .20, < .01$), physical attractiveness ($r = .22, p < .01$), physical condition ($r = .24, p < .01$), and self-esteem ($r = .34, p < .001$). Agreeableness was not related to any self or body image variables.

Unlike in women, in men personality traits did not correlate with men's actual-ideal body discrepancy, comparison tendency, awareness and internalization of sociocultural ideals.

Table 5.3: Zero-order correlations between men's personality traits and self image variables.

	Extr.	Agree.	Open.	Consc.	Stab.	BES	UBS	PA	PC	EDI	PBIS	CTM	Aware.	Int.	RSES		
Extr.	-															.40***	
Agree.		-															.28***
Open.			-														.34***
Consc.				-													.38***
Stab.					-												.46***
BES						-											.36***
UBS							-										.47***
PA								-									.45***
PC									-								.17*
BD-EDI										-							-.35***
PBIS											-						.60***
Comp.												-					.33***
Aware.													-				.54***
Int.														-			-.18*
RSES															-		-.18*

Note. Agree. - Agreeableness subscale derived from the Ten Item Personality Inventory (TIPI; Gosling, et al., 2003); Aware. - Awareness subscale of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ; Cusumano and Thompson, 1997); BES - overall body esteem (BES; Franzoi and Shields, 1984); Consc. - Conscientiousness (TIPI; Gosling, et al., 2003); CTM - Comparison to Models (Strowman, 1996); EDI-BD - Body Dissatisfaction subscale of the Eating Disorder Inventory (Garner et al., 1983); Extr. - Extraversion (TIPI; Gosling, et al., 2003); Int. - Internalization subscale of the SATAQ (Cusumano and Thompson, 1997); Open. - Openness (TIPI; Gosling, et al., 2003); PA - Physical Attractiveness subscale of the Body Esteem Scale (BES; Franzoi and Shields, 1984); PBIS - Pictorial Body Image Scale measuring actual-ideal body discrepancy (Stunkard et al., 1983); PC - Physical Condition subscale of the Body Esteem Scale (BES; Franzoi and Shields, 1984); RSES - Rosenberg Self-Esteem Scale (Rosenberg, 1965); Stab. - Emotional Stability (TIPI; Gosling, et al., 2003); UBS - Upper Body Strength subscale of the Body Esteem Scale (BES; Franzoi and Shields, 1984).

Basis: $n = 175$ men.

* $p < .05$, ** $p < .01$, *** $p < .001$ (Pearson).

5.5 Discussion and conclusion

Taken together, the above results of this pilot study suggest that personality traits are related to self- and body image of men and women. As hypothesized in the introductory chapter in Part I, emotional stability and extraversion were associated with several variables of interest. In both men and women more emotional stability and more extraversion were related to higher body- and self-esteem. Whereas less emotional stability was related to greater comparison tendency, internalization of the thinness ideal, and body dissatisfaction in women only. In men, only conscientiousness was associated with greater body dissatisfaction; emotional stability was not. In women, extraversion was also associated with greater comparison tendency. In men, none of the personality traits were related to comparison tendency, awareness or internalization of sociocultural ideals. In both men and women, agreeableness, openness to experience, and conscientiousness were also associated with greater body- and self-esteem. None of the personality traits in men or women were related to actual-ideal body discrepancy.

This study showed that less emotionally stable (or more neurotic) women are more likely to internalize the sociocultural ideals and are more likely to be less satisfied with themselves. Thus, these women are likely to be dissatisfied with their bodies already prior to exposure to idealized portrayals of men and women. This supports our expectation that more neurotic women are likely to suffer more from the negative effects of such exposure than emotionally stable and self-satisfied individuals who may be even entirely unaffected by such short-term manipulation. Surprisingly, emotional stability was not found to correlate with body dissatisfaction in men; whereas less conscientious men were found to be less satisfied with their bodies. Extraversion was not related to body dissatisfaction in men or women. Almost all personality traits were related body and self-esteem, which illustrated that personality may be inextricably linked to individuals' self-evaluations. Chapter 6 will explore these relationships in more depth.

All in all, as already mentioned, the answer to RQ 4 (Do personality traits, neuroticism and extraversion in particular, moderate the effects of media exposure to idealized body portrayals on self and body image?) requires an experimental

investigation. Yet, the fact that emotional stability and extraversion correlate significantly with several body- and self image measures is a good basis for including these personality traits as moderators in further studies.

Chapter 6

Personality traits and body image: Exploring the mediational relationships

6.1 Introduction

Previous work suggests that psychological factors such as self-esteem, social comparison, or social identity influence one's body image (Grogan, 2010). Body image is a broad construct that relates to a person's perceptions, feelings, and thoughts about one's body (Grogan, 2008). This construct has been operationalized in many different ways, including appearance and body dissatisfaction (evaluative aspect of body image), body concern and appearance anxiety (affective aspect), as well as drive for thinness and muscularity (Thompson et al., 1999). Self-esteem, internalization of sociocultural ideals, and the tendency to make appearance comparisons are among the most commonly studied predictors of positive or negative body image (Grogan, 2010). However, even when accounting for these factors, considerable variability in body image remains, suggesting the involvement of additional individual-level factors. While research is somewhat sparse, one promising possibility is that personality traits are related to body dissatisfaction (i.e., evaluative body image). For instance, past findings indicate a

positive relationship between neuroticism (also referred to as emotional stability) and body dissatisfaction in women (Brannan and Petrie, 2008; Davis and Cowles, 1989; Davis, 1990a; Dionne and Davis, 2004; Hollin et al., 1985; Tylka, 2004), and in men (Davis et al., 1991). Neuroticism was also found to predict more negative, and extraversion more positive, appearance evaluation (Kvalem et al., 2006). In addition, neuroticism and extraversion were found to be predictors of body appreciation (i.e., a measure of positive body image) in both men and women (Swami et al., 2008). Moreover, most recent experimental studies have suggested that neuroticism moderates the effect of exposure to idealized images of women on body dissatisfaction and body esteem, with more neurotic women experiencing higher levels of body dissatisfaction and lower body esteem after exposure (Dalley et al., 2009; Roberts and Good, 2010). Finally, research in clinical populations has established a link between personality disorders and the onset, symptomatic expression, and maintenance of eating disorders in women (for a review see Cassin and Ranson, 2005). The above relationships likely stem from the fact that neurotic individuals are more emotionally reactive to social comparisons and generally more negative towards themselves and their appearance (Kvalem et al., 2006). By contrast, extraverts are generally more outgoing and positive in affect, leading to more positive self-evaluations (Kvalem et al., 2006).

But what is the exact nature of the relationship between personality traits and body image? Answering this question is critical if an ultimate goal is identification of vulnerable populations (e.g., adolescents susceptible to developing eating disorders) and subsequent intervention. Prior work has assumed that the relationship between personality and body dissatisfaction as a direct one. But personality relates to other individual difference factors that are in turn related to body dissatisfaction, raising the possibility of a more complex relationship. Most notably in the present context, personality traits are also associated with trait self-esteem (which is itself one of the strongest predictors of body image; Grogan, 2010). Robins, Tracy, Trzesniewski, Potter, and Gosling (2001) showed that the Big Five dimensions (agreeableness, conscientiousness, emotional stability (vs. neuroticism), extraversion, and openness to experience; Digman, 1990; McCrae and

Costa, 1999) account for 34% of variance in self-esteem. Out of these five personality traits, emotional stability correlates the strongest with self-esteem ($r = .50$), followed by extraversion ($r = .38$), and conscientiousness ($r = .24$; Robins, et al., 2001). The correlation between the remaining personality traits (openness and agreeableness) and self-esteem was lower ($r \leq .17$; for similar results see Watson, Suls, and Haig, 2002). Thus, self-esteem appears to be directly related to personality.

In addition, self-esteem is closely related to body dissatisfaction in both men and women (Green and Pritchard, 2003; Franzoi and Shields, 1984; Silberstein et al., 1988). This relationship is hardly surprising; many have suggested that young men and women have been socialized to believe that appearance is a basis for self-evaluation and evaluation by others (e.g., Thompson et al., 1999), and low satisfaction with one's body is very often associated with low self-esteem and vice versa. In fact, the correlation between body satisfaction and self-esteem is remarkably strong and robust, with an average correlation of .65 in the U.S. (Harter, 1999). However, the direction of the relationship between body dissatisfaction and self-esteem has not yet been established (Grogan, 2010).

Thus, personality traits, body dissatisfaction, and self-esteem are all closely related. But what specific patterns characterize their relationships? We propose that the relationship between personality traits (emotional stability, extraversion, conscientiousness) and body dissatisfaction will be mediated by self-esteem (Hypothesis 1), contrasting this with an alternative model in which body dissatisfaction mediates the relationship between personality and self-esteem. We find the former more plausible because self-esteem, as a *highly general* self-appraisal, will likely exert influence on the many more specific forms of self-appraisal (e.g., appraisal of one's own body), while the reverse pathway is more tenuous.

In testing our hypothesized model, we focus on the three personality traits, which correlate most highly with self-esteem (emotional stability, extraversion, conscientiousness), especially those, which have been shown to relate to body dissatisfaction (emotional stability, extraversion). We do, however, also explore the status of the remaining personality traits (agreeableness and openness), as they

have not been examined previously.

While the majority of men and women are aware of sociocultural ideals of beauty, not all internalize these attitudes to the same extent (Cusumano and Thompson, 1997). The level of internalization of sociocultural ideals is positively associated with women's increased body dissatisfaction (Cusumano and Thompson, 1997; Halliwell and Dittmar, 2004; Tiggemann, 2003) and decreased self-esteem (Williamson et al., 1995). Therefore, we expect that internalization will mediate the relationship between self-esteem and body dissatisfaction in women (Hypothesis 2). Because this relationship has not been explored in men, we did not advance a specific hypothesis for them, but did explore this mediational relationship as well.

Thus, the central goal of this article is to extend our understanding of men's and women's body image by attempting to specify the pathway by which personality influences body dissatisfaction. A secondary goal is to examine the additional role of internalization of sociocultural ideals, as well as potential gender differences across these relationships. Results of this study have implications for identification of susceptible populations, as well as intervention efforts at the individual level. Moreover, the study of both men and women is an additional contribution of this paper, as men have been relatively understudied with regard to body image.

6.2 Method

6.2.1 Participants

Two hundred and twelve undergraduate women and 175 men (age $M = 19.23$, $SD = 1.88$) from a small U.S. university participated in the study in exchange for credit for their introductory psychology course requirement. One hundred thirty four participants were Hispanic/Latino (34.6%), 98 were White (25.3%), 92 Asian (23.8%), 24 African American (6.2%), and 39 used another ethnic identification (10.1%). Our sample was representative of all BMI categories, and men and women were homogenous in terms of their BMI ($\chi^2 = 1.2$, $df = 3$, $p > .10$). Approximately 58% of women and 58% of men were of normal-weight; 23.2%

of women and 26.4% of men were overweight; 11.4% of women and 8.6% of men were obese; and 7.1% of women and 6.3% of men were underweight.

6.2.2 Procedure

Participants signed up for one of two order conditions of the study using the university's online recruitment system. In the first order condition, the measures appeared in the order as described below; in the latter, TIPI was followed by RSES, SATAQ, and then BD-EDI (see below). Upon signing up participants received a link to an online survey and after an informed consent they completed it individually in a non-laboratory setting. The study took less than 20 minutes to complete.

6.3 Materials

6.3.1 Personality traits

We administered the Ten-Item Personality Inventory (TIPI; Gosling, et al., 2003) in which participants were to indicate using a 7-point Likert scale how strongly they associate ten pairs of characteristics with the self, for instance, 'extraverted, enthusiastic' or 'calm, emotionally stable' (see Appendix A.11). Two pairs of adjectives corresponded to each personality dimension of the 'Big-Five' factor model: agreeableness, conscientiousness, emotional stability, extraversion, openness to experiences (McCrae and Costa, 1999). An average rating for each pair of adjectives was calculated to reveal the scores for all five personality traits. This brief measure of the Big-Five personality dimensions was used in the interest of time and it is well-validated in terms of convergent and discriminant validity, as well as test-retest reliability (Gosling et al., 2003).

6.3.2 Body dissatisfaction

Body dissatisfaction was measured using a Body Dissatisfaction subscale of the Eating Disorder Inventory (BD-EDI; Garner, Olmsted, and Polivy, 1983).

This inventory requires participants to indicate how often they experience dissatisfaction with their body parts including stomach, thighs, or buttocks (9 items, see Appendix A.6). Their answers were summed into a single score reflecting body dissatisfaction. Higher scores indicate greater dissatisfaction. While primarily used for women, prior research demonstrates that it is also an appropriate measure of body dissatisfaction in men (e.g., Brand, Rothblum, and Solomon, 1992; Olivardia, Pope, Borowiecki, and Cohane, 2004), for whom dissatisfaction is often linked to different body parts and features (e.g., arms, stomach). In our sample we achieved good internal consistency, $\alpha = .86$.

6.3.3 Self-esteem

To assess trait self-esteem, we used Rosenberg's Self Esteem Scale (RSES; Rosenberg, 1965), a ten-item measure using a 4-point Likert scale. Self-esteem was assessed through agreement with positive or negative self-evaluative statements, for example 'On the whole I am satisfied with myself' or 'I feel I do not have much to be proud of', and responses were averaged into a single index of self-esteem (see Appendix A.4). Internal consistency of RSES in this study was good, $\alpha = .87$.

6.3.4 Internalization of sociocultural ideals

A 21-item questionnaire was used to measure participants' awareness and internalization of the sociocultural ideals (Sociocultural Attitudes Towards Appearance Questionnaire - SATAQ; Cusumano and Thompson, 1997). These two constructs are considered separate and do not correlate with each other (Heinberg and Thompson, 1995). Participants were asked to answer questions like 'I believe clothes look better on thin models' (internalization item) or 'In today's society, it's not important to always look attractive' (awareness item, see Appendix A.10). Participants filled out the entire questionnaire even though we were interested in the internalization subscale only. Internal consistency for both sub-scales was acceptable; $\alpha = .72$ for awareness (10 items) and $\alpha = .71$ for internalization (11 items).

6.4 Results

6.4.1 Descriptive statistics

We ran independent-samples t -tests to investigate gender differences in all study variables (Tables 6.1 (women) and 6.2 (men) present means and standard deviations). In our sample, women scored higher on agreeableness ($t(385) = 4.03, p < .001$), conscientiousness ($t(385) = 5.31, p < .001$), openness to experience ($t(385) = 3.41, p < .01$), extraversion ($t(385) = 2.39, p < .05$), and lower on emotional stability ($t(385) = 2.21, p < .05$) than men. Women also reported greater internalization of sociocultural ideals ($t(385) = 4.36, p < .001$), and a higher level of body dissatisfaction ($t(385) = 3.72, p < .001$). Men and women reported similar levels of self-esteem ($t(385) = .80, p > .10$). There were no order

Table 6.1: Zero-order correlations and observed means (with standard deviations) of study variables in women.

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>M</i>	<i>SD</i>
1. Agreeableness	-		.18**		.37***		.16*		4.95	1.04
2. Conscientiousness		-	.19**		.20**		.22**		5.38	1.16
3. Openness			-	.44***	.20**		.18**		5.48	1.00
4. Extraversion				-	.28***		.34***		4.62	1.35
5. Emotional stability					-	-.16*	.35***	-.13**	4.56	1.26
6. Body dissatisfaction						-	-.35***	.46***	8.86	6.78
7. Self-esteem							-	-.27***	20.22	4.78
8. Internalization								-	37.13	7.96

Note: $n = 212$ women. Only statistically significant correlations are reported (** $p < .001$, ** $p < .01$, * $p < .05$).

Table 6.2: Zero-order correlations and observed means (with standard deviations) of study variables in men.

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>M</i>	<i>SD</i>
1. Agreeableness	-			-.16*	.26***				4.53	1.03
2. Conscientiousness		-	.18*	.22**		-.22**	.34***		4.72	1.28
3. Openness			-	.36***			.28***		5.11	1.08
4. Extraversion				-	.33***		.40***		4.29	1.32
5. Emotional stability					-		.38***		4.84	1.20
6. Body dissatisfaction						-	-.35***	.17*	6.49	5.54
7. Self-esteem							-	-.18*	20.64	5.43
8. Internalization								-	33.78	6.97

Note: $n = 175$ men. Only statistically significant correlations are reported (** $p < .001$, ** $p < .01$, * $p < .05$).

effects in men and women for any of the variables ($p > .10$). Due to the fact that gender interacts with all study variables (except for self-esteem), we will present inter-correlations and path analyses separately for men and women.

6.4.2 Correlations

Tables 6.1 (women) and 6.2 (men) present zero-order correlations between personality traits, body dissatisfaction, self-esteem, and internalization of the sociocultural ideals; they also report means and standard deviations for all variables. In both women and in men, emotional stability was positively associated with agreeableness, extraversion, and self-esteem, whereas extraversion was positively associated with openness, emotional stability, and self-esteem. In addition, conscientiousness and openness (as well as agreeableness in women) were positively correlated with self-esteem. Similarly to results reported by Robins et al. (2001), in our sample emotional stability, extraversion, and conscientiousness were the strongest correlates of self-esteem. In both men and women, internalization of sociocultural ideals was positively associated with body dissatisfaction and negatively associated with self-esteem (and emotional stability in women). Body dissatisfaction was positively correlated with self-esteem and internalization, and negatively with emotional stability in women and with conscientiousness in men.

6.4.3 Path model A

To test the hypothesis that self-esteem will mediate the relationship between three personality traits (emotional stability, extraversion, conscientiousness) and body dissatisfaction in both women and men, we conducted a path analysis. We also explored potential direct and indirect relationships between the remaining personality traits and body dissatisfaction. Specifically, we tested the hypothesis that self-esteem mediates the relationship between emotional stability and body dissatisfaction, as well as between extraversion, conscientiousness and body dissatisfaction. We did not expect a direct association between any of the personality traits and body dissatisfaction. Due to the gender differences described above, we conducted independent analyses for men and women.

The results of the analysis for women are presented in Figure 6.1. The path coefficients are standardized beta weights derived from a series of multiple regression analyses. Overall, the six predictors in the analysis accounted for 14% of the variance in women's body dissatisfaction ($F(6, 205) = 5.51, p < .001$), and per-

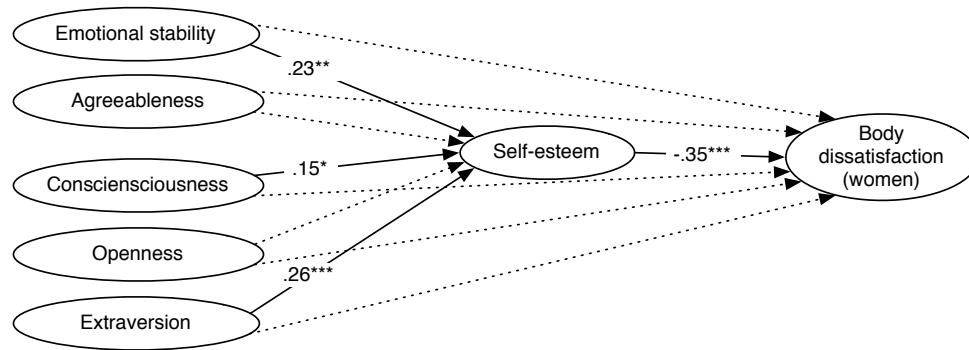


Figure 6.1: Path model presenting direct and indirect relationships between personality traits, self-esteem, and body dissatisfaction in women. *Note:* * $p < .05$, ** $p < .01$, *** $p < .001$. Dotted lines represent paths with statistically non-significant coefficients.

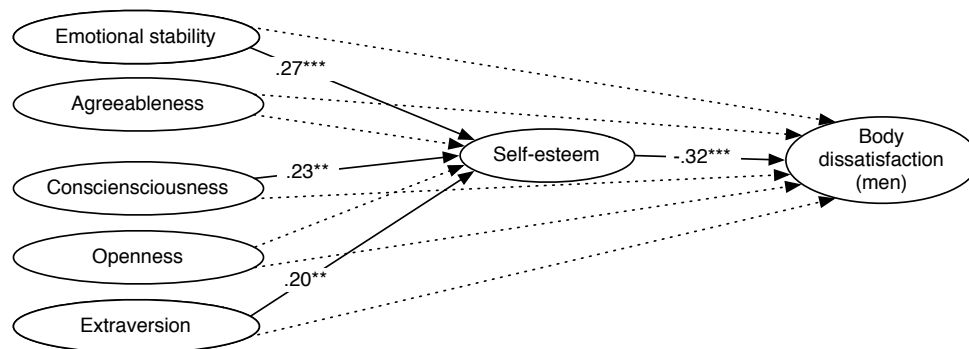


Figure 6.2: Path model presenting direct and indirect relationships between personality traits, self-esteem, and body dissatisfaction in men. *Note:* * $p < .05$, ** $p < .01$, *** $p < .001$. Dotted lines represent paths with statistically non-significant coefficients.

sonality traits accounted for 21% of variance in women's self-esteem ($F(5, 206) = 10.84, p < .001$). The results of the analysis for men are presented in Figure 6.2. The predictors in the analysis accounted also for 14% of the variance in men's body dissatisfaction ($F(6, 168) = 4.72, p < .001$), and personality traits accounted for 30% of the variance in their self-esteem ($F(5, 169) = 14.35, p < .001$). Overall, we supported our hypothesized model. In both men and women, self-esteem mediated the relationship between three hypothesized personality traits (emotional stability,

extraversion, conscientiousness) and body dissatisfaction. In both genders, once self-esteem was entered into the model, there were no significant direct relationships between any personality traits and body dissatisfaction, providing evidence of full mediation.

6.4.4 Path model B

To test the second proposed model that internalization of ideals would mediate the relationship between self-esteem and body dissatisfaction, in addition to the relationships proposed and tested above, a second set of path analyses was undertaken. The model was as follows: self-esteem was hypothesized to mediate the relationship between emotional stability and internalization, as well as between extraversion, and conscientiousness and body dissatisfaction; internalization would mediate the relationship between self-esteem and body dissatisfaction (Hypothesis 2); no direct relationships between personality traits and body dissatisfaction were expected.

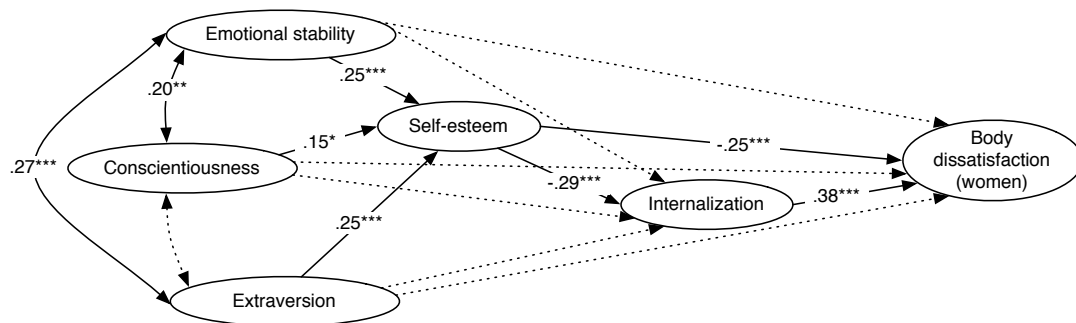


Figure 6.3: Path model presenting direct and indirect relationships between personality traits, self-esteem, internalization, and body dissatisfaction in women. *Note:* * $p < .05$, ** $p < .01$, *** $p < .001$. Dotted lines represent paths with statistically non-significant coefficients.

The results of the analysis for women are shown in Figure 6.3. Overall, the five predictors in the analysis accounted for 27% of the variance in women's body dissatisfaction ($F(5, 206) = 15.33, p < .001$); which represents an 8% increase from Path model A (Figure 6.1). Personality traits and self-esteem accounted for

9% of the variance in women's internalization of sociocultural ideals ($F(4, 207) = 5.16, p < .01$); whereas personality traits accounted for 21% of the variance in women's self-esteem ($F(3, 208) = 18.03, p < .001$). The results of the analysis for men are presented in Figure 6.4. The predictors in the analysis accounted for 15% of the variance in men's body dissatisfaction ($F(5, 169) = 5.81, p < .001$); which shows almost no increase from the previous model (Figure 6.2). Personality traits and self-esteem accounted only for 4% of the variance in men's internalization ($F(4, 170) = 1.81, p > .10$); whereas personality traits accounted for 28% of the variance in men's self-esteem ($F(3, 171) = 22.59, p < .001$).

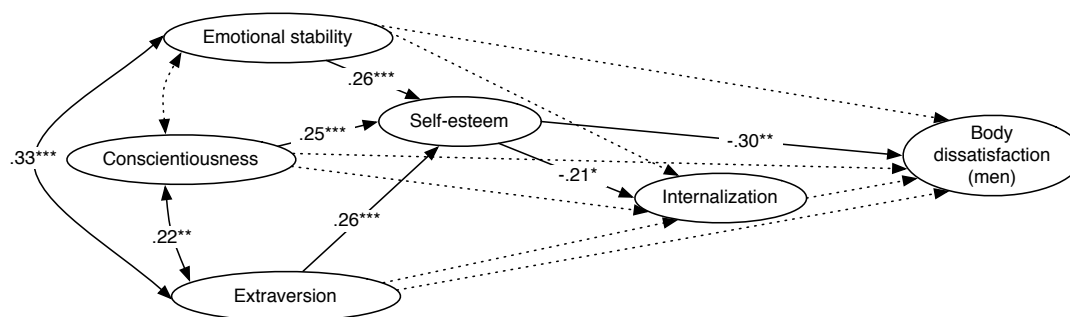


Figure 6.4: Path model presenting direct and indirect relationships between personality traits, self-esteem, internalization, and body dissatisfaction in men. *Note:* $*p < .05$, $**p < .01$, $***p < .001$. Dotted lines represent paths with statistically non-significant coefficients.

Overall, we supported our hypothesized model in women and only partially in men. In women, self-esteem mediated the relationship between each of the hypothesized personality traits (emotional stability, extraversion, conscientiousness) and body dissatisfaction, as well as between personality and internalization of sociocultural ideals. Internalization in turn mediated the relationship between self-esteem and body dissatisfaction. In men, self-esteem was the only mediator between personality traits and body dissatisfaction; it also mediated the relationship between personality and internalization. But internalization was not a significant predictor of body dissatisfaction. There were no significant direct relationships between any personality traits and body dissatisfaction in both genders.

6.4.5 Alternative path model A

To ensure that we are correctly specifying the direction of relationships between variables, we compared the simpler model presented in Figures 6.1 and 6.2 with an alternative model representing the reverse mediational relationship, in which body dissatisfaction mediated the relationship between five personality traits and self-esteem. No mediational relationships were found for the relationship between personality and body dissatisfaction for either men and women. There were only direct relationships between personality traits (extraversion, conscientiousness, emotional stability) and body dissatisfaction. This provides support for the directionality proposed above.

6.5 Discussion and conclusion

This study investigated the relationship between personality and body dissatisfaction in a non-clinical population of both women and men. This work's unique contributions include the elucidation of a mediational role for self-esteem that has not received much attention in the literature, and the inclusion of men, who have received little prior attention.

In accordance with previous findings (Brannan and Petrie, 2008; Davis, 1990a; Dionne and Davis, 2004), our data show a significant negative correlation between emotional stability and body dissatisfaction in women. In men, only conscientiousness was negatively associated with body dissatisfaction. However, we established that these relationships were not direct. Once self-esteem was incorporated into the model, no direct relationships between personality traits (emotional stability, extraversion, conscientiousness) and body dissatisfaction remained. That is, self-esteem fully mediated the relationship between these three personality traits (emotional stability, extraversion, conscientiousness) and body dissatisfaction. The remaining two personality traits (agreeableness and openness) were not consistently correlated with either self-esteem or body dissatisfaction.

For women, we also found that internalization of sociocultural ideals was an additional mediator of the relationship between self-esteem and body dissatis-

faction. Women with higher self-esteem internalized sociocultural ideals less than those with lower self-esteem, and this in turn led to less reported body dissatisfaction. We suggest that low self-esteem places women at risk of needing external validation for their physical self-worth, a form of validation difficult to obtain given the often unrealistic ideals portrayed in contemporary media. In men, while higher self-esteem was also related to lower internalization, internalization was unrelated to body dissatisfaction. This gender difference supports (somewhat scarce) prior work showing that internalization of sociocultural ideals does not interact with exposure effects on mens body satisfaction (Agliata and Tantleff-Dunn, 2004). Thus, while both men and women have aspirations to be closer to the sociocultural ideal, men's body satisfaction appears to be independent of those beliefs. At the very least, this gender difference suggests that perceived match or mismatch with sociocultural body ideals play a larger role in women's mental life; certainly this finding is worthy of future attention.

We would like to acknowledge several limitations in the current investigation. One concerns the online nature of the data collection. While issues of honest reporting are present in both online and laboratory studies, online data collection involves an additional lack of control over the conditions in which participants are completing the survey (e.g., noise, interruptions). While we cannot completely eliminate this concern, participants in our study received detailed instructions requesting that they work in a quiet area and complete the study without interruptions. Thus, while online data collection does involve some additional uncertainty, we are unaware of any reason why this uncertainty would lead to any form of systematic bias that would threaten the validity of our conclusions. Another limitation is the use of a body dissatisfaction scale (BD-EDI; Garner, et al., 1983) that represents dissatisfaction with body parts, which are known to be most troubling to women (stomach, hips, thighs). As compared to women, men might be more concerned about the appearance of their arms, legs, and stomach rather than thighs or hips. The use of this measure for men implies that mens body dissatisfaction scores might have been slightly underestimated. However, since we analyzed our hypothesized model separately for men and women, it is unlikely that

this limitation had an impact on the study's conclusions.

The current study demonstrated that the relationship between personality and body image is more complex than shown in prior work (Brannan and Petrie, 2008; Davis and Cowles, 1989; Davis, 1990a; Davis et al., 1991; Hollin et al., 1985; Kvaem et al., 2006; Tylka, 2004). Self-esteem is inextricably linked to body dissatisfaction, and we found that personality traits are associated with self-esteem rather than being directly associated with body dissatisfaction. It seems that more neurotic, more introverted, and less conscientious individuals are particularly at risk for lower self-esteem and thus also greater level of body dissatisfaction, which is associated with disordered eating (Brannan and Petrie, 2008; Tylka, 2004). In addition, women with lower self-esteem may be more likely to internalize the sociocultural ideals and consequently to be at a higher risk of body dissatisfaction.

The mediational mechanism involving self-esteem described in this study also has implications for designing intervention programs for women displaying symptoms of eating disorders such as strong body dissatisfaction. Rather than focusing on body issues exclusively, our results suggest that efforts should also be made to address self-esteem more directly, since it sits in an intermediate position between personality and body image. Of course, trait self-esteem is difficult to change and is partially hereditary (30% of variance is due to genetic variation; Kendler, Gardner, and Prescott, 1998). Nonetheless, there is evidence that self-esteem can be malleable, with prior work suggesting that it decreases slightly during a transition from elementary to junior high school but then it raises progressively through high school and college (Eccles et al., 1989; McCarthy and Hoge, 1982; O'Malley and Bachman, 1983; Twenge and Campbell, 2001). Thus, the time around the transition from elementary and junior high school when young adolescents are experiencing a decline in self-esteem is also the time of real risk of developing eating disorders. This transition period is when psychiatric disorders like disordered eating are more common than during childhood or adulthood (Rutter et al., 1976). This is exactly when interventions focusing on self-esteem may be most effective, not only in terms of impacting self-esteem itself but also in the prevention of disturbed eating.

Chapter 7

Effects of exposure to TV advertisements on body esteem and body perception

7.1 Introduction

In the following experiment, we made two major changes to the previous experimental designs (Chapters 3 and 4). First, instead of investigating the effects of exposure on implicit and explicit self-esteem, in this experiment we used body image related dependent measures, that is implicit body perception and explicit body esteem. Second, we investigated a number of moderators of the effects of exposure on body image measures. As stated in the Introduction in Part I, we expected two personality traits, neuroticism (aka emotional stability) and extraversion, to play a moderating role of the exposure to idealized body portrayals on individuals' body perception and body esteem. In addition, we investigated two further personal moderators, Body Mass Index (BMI) and one's comparison tendency. Finally, we also studied the moderating role of gender and race/ethnicity (for an overview of all constructs studied in this study, see Figure 4.6). The following research questions and hypotheses motivated this study.

We expected that two personality traits, extraversion and neuroticism, will

let us differentiate between participants who are more or less vulnerable to the negative effects evoked by exposure to idealized bodies. Neurotic individuals are considered to be more likely to experience negative emotional states and therefore may be particularly vulnerable to and exhibit the most negative consequences of exposure (Roberts and Good, 2010). Moreover, neurotic individuals tend to exhibit higher levels of body dissatisfaction and lower body esteem than their emotionally stable counterparts (Davis, 1990b; Davis et al., 1991). Highly extraverted participants are expected to be more active, outgoing, and more positive about their appearance (Kvalem et al., 2006) and therefore will not experience the negative effects of exposure to the same extent as introverted participants.

RQ₁: Do effects of exposure to idealized female body portrayals on participants' implicit body perception and overall body esteem differ depending on participants' level of neuroticism and extraversion?

H_{1a}: Neurotic participants will perceive their bodies to be significantly larger and will have a lower overall body esteem after viewing advertisements highlighting women's idealized bodies. This negative effect of exposure, likely resulting from social comparisons, is going to be weaker or absent in participants who are emotionally stable.

H_{1b}: Introverted participants will perceive their bodies to be significantly larger and will have a lower overall body esteem after viewing advertisements highlighting women's idealized bodies. This negative effect of exposure is going to be weaker or absent in participants who are extraverted.

The second personal moderator, one's tendency to compare oneself to media models, was also included (for more detail, see Chapter 2). Like the BMI, this variable is related to Social Comparison Theory (SCT; Festinger, 1954). Following this theory, the majority of women are likely to engage in upward comparison to models seen as superior to them (Festinger, 1954). These types of comparisons were found to often result in increased emotional distress and decreased self-esteem (Major et al., 1991). Therefore, it is often expected that women with a stronger comparison tendency would experience more negative effects of media messages. Men with a strong tendency to compare themselves to male models might also be more negatively affected by exposure to female ads by having a stronger tendency

to evaluate themselves as potential partners for these women. Even though previous work did not find evidence for this variable to be a significant moderator of the the effects of exposure to female advertising models (Cattarin et al., 2000; Dittmar and Howard, 2004), we will include it, especially since it has never been investigated in men:

RQ₂: Do effects of exposure to idealized female body portrayals on participants' implicit body perception and overall body esteem differ depending on participants' comparison tendencies?

H₂: Participants with a greater tendency to compare themselves to media models will perceive their bodies to be significantly larger and will have a lower overall body esteem after viewing advertisements highlighting women's idealized bodies. This negative effect of exposure is going to be weaker or absent in participants with rarely engage in such comparisons.

In prior research Body Mass Index (BMI) was often included as a potential moderating variable of the exposure effects (Barlett et al., 2005; Brown and Dittmar, 2005; Halliwell and Dittmar, 2004; Hamilton et al., 2007; Henderson-King and Henderson-King, 1997). The rationale behind including this moderator lies in the SCT (Festinger, 1954). As mentioned above, advertising images portraying female models highlight the social ideal of slenderness, and women are likely to compare themselves upwardly to this ideal. Heavier women are likely to perceive a larger discrepancy between the self and the ideal and therefore may be more unhappy with their bodies than thinner women, who are closer to the ideal (Collins, 1996; Henderson-King and Henderson-King, 1997). Moreover, one could expect that whereas heavier women's more negative self-evaluations would result from contrast effects, thinner women's self-evaluations might be a result of self-enhancement. This is due to the fact that heavier women are likely to compare themselves downwardly to the advertising models (Festinger, 1954), while thinner women who are close to the thin ideal might imagine themselves in their ideal body through an inspirational effect (Collins, 1996). Due to the fact that there exists mixed support for the expectation that heavier women might be more negatively affected by exposure to idealized body portrayals, as discussed in detail in Chapter 2, we decided to include this variable in our study in order to investigate it further:

RQ₃: Do effects of exposure to idealized female body portrayals on participants' implicit body perception and overall body esteem differ depending on participants' BMI?

H₃: Participants with greater body weight (overweight and obese) will perceive their bodies to be significantly larger and will have a lower overall body esteem after viewing advertisements highlighting women's idealized bodies. This negative effect of exposure is going to be weaker or absent in normal- and underweight participants.

In addition to the above, this study will investigate the two research questions asked in our previous studies. First:

RQ₄: Do effects of exposure to idealized female body portrayals on participants' implicit body perception and overall body esteem differ depending on race/ethnicity?

To reiterate expectations from previous Chapters (especially Chapters 3 and 4), we expect to find racial/ethnic differences due to the fact that men and women of different racial/ethnic groups tend to idealize different body sizes.

H₄: The effects of exposure to advertisements highlighting women's idealized bodies will differ across race/ethnicity.

The second research question is:

RQ₅: Do effects of exposure to idealized female body portrayals on participants' implicit body perception and overall body esteem differ depending on gender?

With regard to gender, this study has an exploratory character. Men and women might very well be similarly affected by exposure to images of thin and attractive women. The mechanisms responsible for potential negative effects of exposure might be, however, very different: whereas in women they might result from social comparison, in men - they might reflect self-evaluations as potential mates for these women. Due to the fact that little work has been done directly comparing effect on men and women, and we are using implicit methods that have not been used before, we do not have enough prior information to specify hypotheses.

Finally, this study will investigate the effects of exposure on two types of outcomes: implicit (body perception) and explicit (body esteem). However, due to the fact that these two variables are not measuring the same or a very closely related construct as in the previous studies, where we measured implicit and explicit self-esteem (Chapters 3 and 4), we cannot compare them *directly*. They are considered independent constructs.

7.2 Method

7.2.1 Participants

Two hundred and fifty seven undergraduate students (185 women and 72 men) from a small U.S. university volunteered to participate in the study in exchange for partial credit for their introductory psychology course requirement. Participants were between 18 and 52 years old ($M = 19.35$, $SD = 2.93$). One hundred and three participants were Hispanic/Latino (40.1%), 77 were Asian (30.0%), 42 White (16.4%), 15 African American (5.8%), and 20 used another ethnic identification (7.8%).

7.2.2 Procedure

After signing a consent form participants were randomly assigned to one of the two conditions: experimental condition with female ads, or a control condition with car ads. Volunteers participated individually in three ostensibly unrelated tasks. First, a priming task containing TV ads was introduced as part of a marketing study of products advertised on television. Participants in both conditions viewed the ads and answered questions relating to them. Second, all participants were asked to do a categorization task that investigated how people classify words (Implicit Association Test measuring body perception). Third, they filled out on the computer a ‘Health Psychology’ survey that was supposedly developed in cooperation with school’s health psychology department to study students’ mental health. This survey contained all explicit measures as well as recorded participants’

demographic information. The entire experiment took approximately 25 minutes to complete. An overview of the experimental design of the study is presented in flowchart in Figure 7.1.

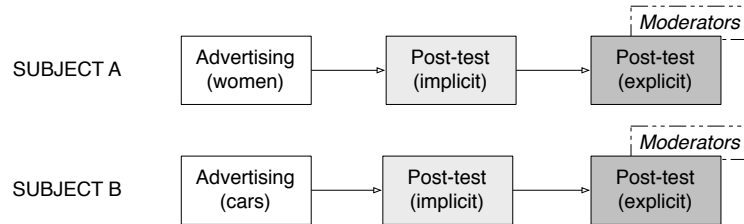


Figure 7.1: Experimental design of the study (between-subjects).

7.3 Materials

7.3.1 Priming task

Participants in the first condition viewed 6 U.S. TV ads of women’s fragrances (e.g., Dior), underwear (e.g., Victoria’s Secret) or beachwear (e.g., Old Navy) which highlighted women’s thin and sexually attractive bodies (for screenshots and pretest results see Appendix B.1). The second condition contained 6 U.S. TV ads presenting cars (see Appendix B.3). Each ad regardless of the condition lasted between 30 and 60 seconds and the overall exposure time in each of the two conditions was approximately 5 minutes. Ads were presented in one order only. To strengthen the cover story of a ‘marketing study of advertising effectiveness’ participants were asked to rate each ad on four criteria (good, likable, enjoyable, attention-getting) using a 7-point Likert-type scale. In addition, subjects were asked two questions about their buying behavior: ‘Have you ever bought the advertised product?’ and ‘Would you buy the product based on the ad shown?’ (adopted from Rudman and Borgida, 1995).

The reason why we reduced the number of ads from 16 (as in Chapters 3 and 4) to 6 was to investigate whether we can achieve an effect with a shorter exposure. We also feared that too long exposure might lead to a habituation effect.

A meta-analytic review by Groesz et al. (2002) showed that on average studies that used 1-9 stimuli produced higher effect sizes than studies that used 10 or more stimuli. This comparison did not, however, differentiate between print or TV ads to show an optimal number of TV advertisements.

7.3.2 Implicit measure of body perception

The Implicit Association Test (IAT; Greenwald, McGhee, and Schwarz (1998) was used to measure implicit body perception. As mentioned in the earlier sections, the IAT is a response latency measure of dichotomous categorization, in which participants rapidly classify four kinds of stimuli using just two response buttons. In the present case, participants might press a left response button in response to self-related words and thin-related adjectives, and a right response button in response to other-related words and heavy-related adjectives. In a second block of trials, the pairings would be reversed such that self-related words would now be paired with heavy-related adjectives and other-related words with thin-related adjectives. The logic of the IAT is that associated categories will be more rapidly categorized using the same response key. If participants associated thinness with the self, they will be faster when the self-related words share a key with thin-related adjectives. By computing an effect size to measure the degree of facilitation during this pairing, we can produce a measure of implicit body-perception. Thus, our body perception IAT consisted of words relating to self (I, me, my, mine, self), other (them, they, their, theirs, others), thin (anorexic, underweight, thin, light, slim), and heavy (heavy, fat, obese, large, big). The adjectives were selected in such a way that the set of words for ‘thin’ and ‘heavy’ categories contained words with both positive and negative valence (based on a pretest).

As in previous studies, we used a standard five-block IAT and employed the revised scoring algorithm validated with large data sets (Greenwald et al., 2003). This scoring procedure produces an effect size measure for each participant, the IAT D , with positive values representing a thinner implicit body-perception.

7.3.3 Explicit measures

Participants' body esteem was measured using the Body Esteem Scale (BES; Franzoi and Shields, 1984). Participants were given a list of 35 body parts and functions (e.g., lips, hips, body scent, agility) and were asked to indicate how they felt about each of them (see Appendix A.8). Franzoi and Shields (1984) also broke the overall body esteem score into three subscales separate for men and women, but the interest of this study is in the overall body esteem only. Participant's overall body esteem was calculated by adding up scores for all 35 items. The higher the individual's summed score, the more positive their body esteem. The reliability and validity of the BES has been discussed in Franzoi and Shields (1984) and Franzoi (1994).

Apart from the BES, which was the dependent measure in the study, we included the following two measures as potential moderators of the effects of exposure on body image: personality and tendency to compare oneself to media models. We administered the Ten-Item Personality Inventory (TIPI; Gosling, et al., 2003), which measures personality traits on five commonly used dimensions, the so-called 'Big Five'. In this questionnaire, participants were to indicate how strongly they associate ten pairs of characteristics with the self, for instance, 'extraverted, enthusiastic' or 'calm, emotionally stable' (see Appendix A.11). Two pairs of adjectives corresponded to each personality dimension of the 'Big-Five' factor model (agreeableness, openness, extraversion, conscientiousness, emotional stability). To arrive at each individual's personality traits an average rating for each pair of adjectives was calculated. Participants' tendency to compare themselves to media models was measured using a Comparison to Models Survey developed by Strowman (1996). Participants were to indicate how often they engage in different types of comparisons with media models (see Appendix A.9). For a detailed overview of the scoring of all above measures please see Appendix A.1.

Finally, participants were asked to report their demographic information (gender, age, race/ethnicity) as well as height and weight used to calculate their Body Mass Index ($BMI = 703 \times \frac{weight(lb)}{height^2(in^2)}$). This is a reliable way of measuring BMI as research demonstrated that self-reported weight and height differ only by

1-3.5% from individuals' actual weight and height (Bowman and DeLucia, 1992).

7.4 Results

7.4.1 Data reduction

Following the revised scoring algorithm for the IAT (Greenwald et al., 2003) mentioned above, we excluded 8 women and 1 man who had too many (10% or more) short responses ($< 300ms$), indicative of hitting the keys without having enough time to consciously categorize the stimuli. Therefore, the final sample included 177 women and 71 men (attrition 3.5%).

7.4.2 Descriptive statistics

Men's and women's body image tends to differ, so we investigated gender differences in body image related measures using independent-samples t -tests. Even though there were highly unequal sample sizes for men and women in the study, the variances for both genders were equal. T -test analyses revealed that men ($M = 128.63$, $SD = 20.95$) reported a significantly higher overall body esteem ($t(246) = -3.89$, $p < .001$) than women ($M = 117.27$, $SD = 20.70$), whereas participants' implicit body perception did not differ significantly across gender ($t(246) = -1.59$, $p > .10$, $M = .36$, $SD = .44$). Men and women did not differ significantly in terms of their BMI reported ($t(246) = .15$, $p > .10$, $M = 24.44$, $SD = 5.15$); on average participants in the study were of normal weight but close to the overweight cutoff (see more on BMI categories in section 7.4.4 below). Moreover, men and women in this sample reported a similar level of extraversion ($t(246) = 1.28$, $p > .10$, $M = 4.27$, $SD = 1.20$), emotional stability ($t(246) = -.29$, $p > .10$, $M = 4.85$, $SD = 1.36$), whereas the tendency to compare themselves to media models differed only marginally by gender ($t(246) = 1.79$, $p = .074$, men $M = 15.41$, $SD = .75$, women $M = 17.16$, $SD = .54$).

Two one-way between-subjects ANOVAs with race/ethnicity as an independent factor revealed that there was no significant effect of race/ethnicity on

participants' implicit self-esteem ($F(4, 243) = 2.14, p = .076$) or their overall body esteem ($F(4, 243) = 1.18, p > .10$). We ran another set of ANOVAs including only the three most represented ethnic groups (Asian, Hispanic, and White American participants) and it also showed that participants' implicit self-esteem ($F(2, 182) = .13, p > .10$) and their overall body esteem ($F(2, 182) = 1.91, p > .10$) did not differ significantly depending on participants' race/ethnicity.

7.4.3 Main effects of exposure

Two independent-samples t -tests with exposure condition as the independent factor were conducted to compare the effect of exposure to female versus car ads on implicit body perception and overall body esteem. There were no significant differences across conditions found for implicit body perception ($t(246) = 1.1, p > .10, M = .36, SD = .44$) or overall body esteem ($t(246) = .71, p > .10, M = 120.53, SD = 12.36$).

7.4.4 Moderation analyses

Personality traits. First, we tested hypothesis 1a and 1b, stating that individual levels of *extraversion* and *emotional stability* would moderate the effects of exposure to idealized female body portrayals. We ran two multiple regression analyses including three independent factors: extraversion or emotional stability (centered continuous variables), exposure condition (dichotomous variable), and the interaction term (obtained by multiplying the two independent factors). For a regression analysis on body esteem, we also included a third independent factor - gender, due to the fact that it was earlier showed the overall body esteem differs depending on gender. A multiple regression with extraversion, exposure condition, and their interaction on implicit body perception showed no effect of any of the independent variables ($-.05 < \beta < .02, p > .10$). No significant predictors of implicit body esteem were also found in a multiple regression with emotional stability, condition, and their interaction ($-.23 < \beta < .17, p > .10$). A multiple regression with extraversion ($\beta = .46, p = .065$), condition ($\beta = 0, p > .10$),

their interaction ($\beta = -.22, p > .10$), and gender ($\beta = .25, p < .01$) on overall body esteem showed that only the level of extraversion and participant's gender affected body esteem. The impact of extraversion, however, was only marginal. In a multiple regression with emotional stability ($\beta = -.05, p > .10$), exposure condition ($\beta = -.01, p > .10$), their interaction ($\beta = .33, p > .10$), and gender ($\beta = .22, p < .01$) revealed that only gender was a significant predictor of overall body esteem. These results disconfirmed hypothesis 1a and 1b and suggested that individual levels of emotional stability and extraversion do not moderate the effects of exposure to idealized female body portrayals on implicit body perception and body esteem.

Comparison to models. Next, we investigated the moderating role of *comparison tendency* on implicit body perception and overall body esteem (Hypothesis 2). A multiple regression with comparison tendency, condition, and an interaction of the two showed that none of these variables were significant predictors of implicit body perception ($-.11 < \beta < .06, p > .10$). A multiple regression with comparison tendency ($\beta = .37, p = .064$), condition ($\beta = -.03, p > .10$), an interaction of the two ($\beta = -.47, p < .05$), and gender ($\beta = .23, p < .001$) showed that both gender and the interaction term affected the overall body esteem; whereas comparison tendency on its own was only a marginal predictor. As presented in Figure 7.2, in the control condition (car ads) there was a negative correlation between one's comparison tendency and overall body esteem ($r = -.25, N = 123, p < .01$). This relationship was considerably weaker in the thin ads condition in which, in fact, there was no correlation between one's one's comparison tendency and their body esteem ($r = .05, N = 125, p > .10$). The gender difference was such that if participant was male their overall body esteem was higher than if participant was female ($B = 10.93$).

These results partially disconfirmed hypothesis 2 stating, that participants with a greater tendency to compare themselves to media models will perceive their bodies to be significantly larger and will have a lower overall body esteem after viewing advertisements highlighting women's idealized bodies. Our results showed a moderation effect that we predicted, however, its effect was different.

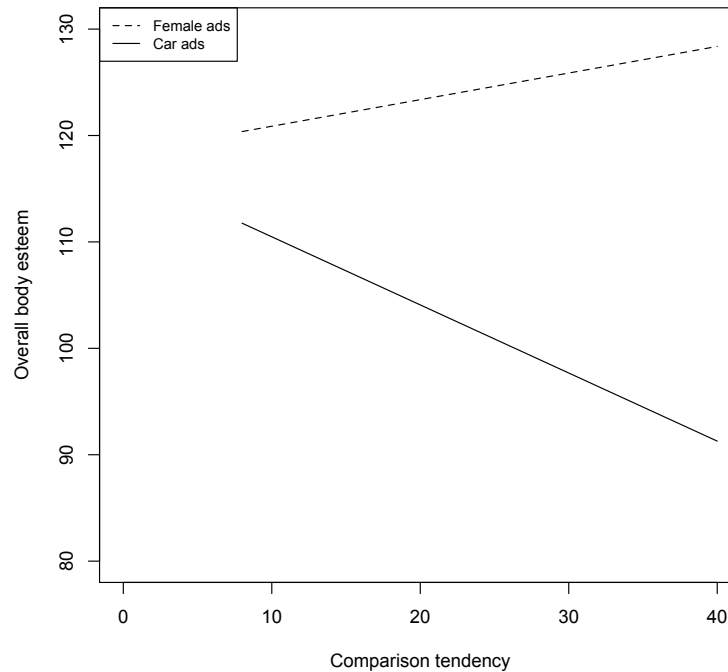


Figure 7.2: Exposure condition by participant’s comparison tendency interaction on overall body esteem (multiple regression). *Note:* The values on the x -axis are limited to possible comparison tendency scores based on the Comparison to Models Survey, see Appendix A.9.

Only participants with high comparison tendency were affected by exposure to ads, and it seems that these were car ads, and not thin ads, that had an effect. Exposure to car ads seems to have decreased participants’ overall body esteem. Hypothesis 2 also stated that the negative effect of exposure would be weaker or absent in participants who rarely engage in comparisons with media models, which was confirmed by our results.¹

¹Even though this procedure results in a considerable loss of variance and statistical power, we recoded the two personality variables (extraversion, emotional stability) and comparison tendency into categorical variables. Three categories (low, medium, high) were created for each of these three variables based on cutoffs derived from a visual inspection of histograms of these variables. Three univariate between-subjects ANOVAs conducted separately for body esteem and for implicit body perception showed no significant interaction effects of exposure condition and any of the three independent variables (extraversion/emotional stability/comparison tendency). The results of these analyses are not reported in detail due to the fact that all of them did not reveal

Body weight. Finally, we tested hypothesis 3, stating that participants' *body weight* will moderate the impact of exposure to women's idealized bodies. In the first set of analyses we used BMI as a continuous variable. A multiple regression with BMI ($\beta = . - 46, p < .05$), condition ($\beta = -.04, p > .10$), an interaction of the two ($\beta = .13, p > .10$), and gender ($\beta = .24, p < .001$) showed that only gender and BMI affected overall body esteem. None of these variables significantly predicted implicit body perception ($-.27 < \beta < .16, p > .10$).

In the second set of analyses, we converted BMI scores into categories, because in everyday life BMI is often used as a categorical variable. For instance, health practitioners use BMI to screen people for weight categories that may lead to health problems. There are four scientifically-derived and commonly used BMI categories: underweight ($BMI \leq 18.5$), normal weight ($18.5 < BMI < 25$), overweight ($25 \leq BMI < 30$), and obese ($BMI \geq 30$) (Center for Disease Control and Prevention, 2010). We recoded the continuous BMI variable into a categorical one with four above classes of BMI. A univariate between-subjects ANOVA with BMI and condition as independent predictors showed that both BMI ($F(3, 240) = 2.71, p < .05$) and the BMI and condition interaction ($F(3, 240) = 2.96, p < .05$) had a significant effect on participant's implicit body perception (see Figure 7.3).

Post-hoc tests revealed that there was a marginal difference ($p = .059$) only between the normal weight and overweight groups in their implicit body perception (Tukey HSD). The mean implicit body perception in the underweight and normal weight groups was equal to .42 ($SE = .10$ and $SE = .04$ in the underweight and normal group respectively), in the overweight group .25 ($SE = .06$), and .28 in the obese group ($SE = .07$). Four independent-samples *T*-test analyses conducted separately for each BMI group revealed that only in normal weight ($t(137) = .78, p < .05$) and overweight participants ($t(55) = -.28, p < .01$) the difference in implicit body perception differed significantly across conditions. This is most likely due to low power in the remaining two BMI groups.

Since men and women differ significantly in their overall body esteem, we conducted an ANOVA testing the condition and BMI interaction separately for any moderational relationships and thus do not provide new information to the above multiple regressions.

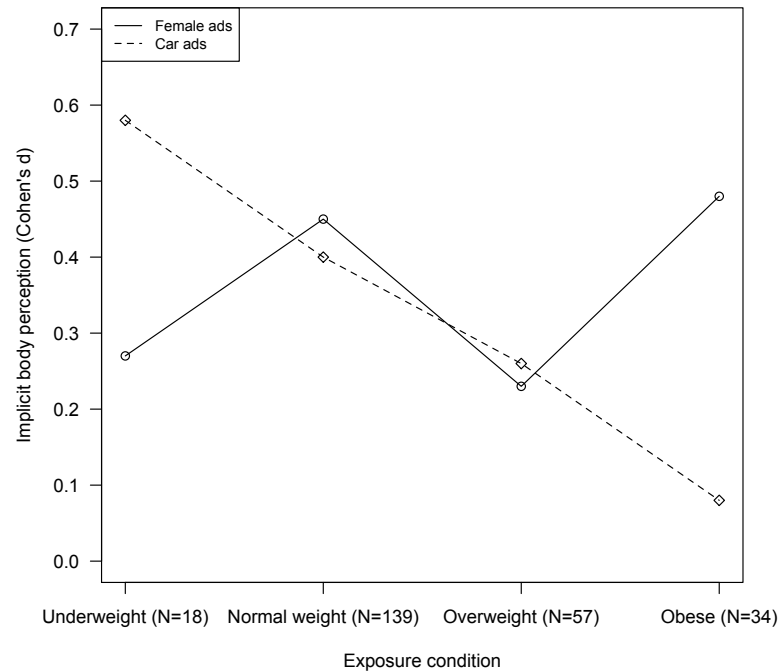


Figure 7.3: Exposure condition by participant's body mass index interaction on implicit body perception (predicted means).

men and women. In women, a univariate between-subjects ANOVA with BMI and condition as independent predictors showed that women's overall body esteem differed significantly depending on women's body weight category ($F(3, 169) = 8.56, p < .001$), while exposure effect had no effect ($F(1, 169) = 0, p > .10$). The condition by BMI interaction had a marginal effect on women's overall body esteem ($F(3, 169) = 2.50, p = .062$). The interaction of BMI and exposure condition on women's body esteem is presented in Figure 7.4.

Post-hoc tests revealed that there were significant differences ($p < .05$) in overall body esteem of women in all groups except two pairs: normal and underweight, obese and underweight (Tukey HSD). All remaining comparisons were significantly different. The mean overall body esteem in the underweight women was 128.93 ($SE = 5.09$), in normal weight women 121.44 ($SE = 1.93$), overweight women - 108.78 ($SE = 3.24$), and 105.97 in obese women ($SE = 3.78$). *T*-test

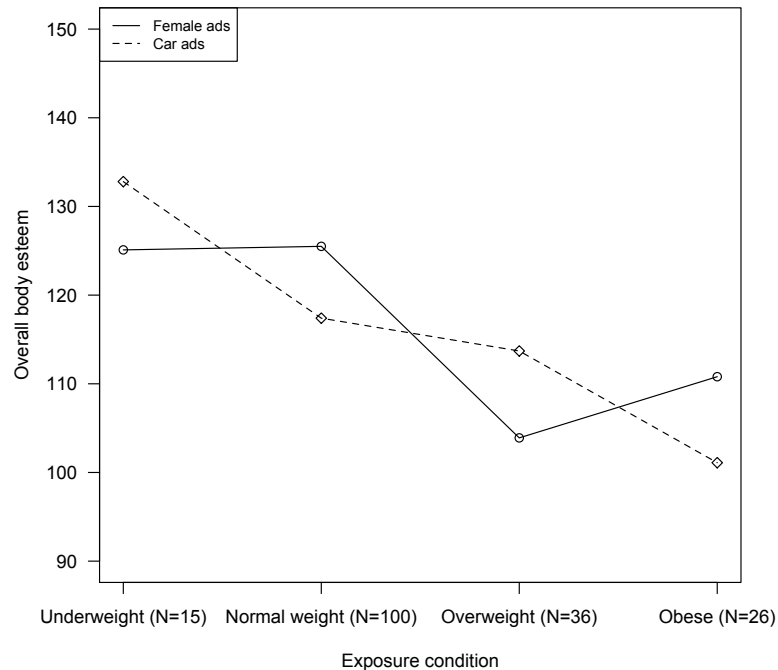


Figure 7.4: Exposure condition by women’s body mass index interaction on overall body esteem (predicted means).

analyses conducted separately for each BMI group revealed that only in normal weight ($t(98) = 1.94, p = .055$) and overweight women ($t(34) = -1.96, p = .058$) the difference in overall body esteem differed marginally across conditions.

We excluded two groups of men from the analysis of the exposure condition by BMI group interaction due to the fact two of the BMI groups had too few participants; there were only 3 underweight and 8 obese men. Hence, the ANOVA was conducted for normal- and overweight men only ($N = 60$). A univariate between-subjects ANOVA with BMI ($F(1, 56) = 2.53, p > .10$) and condition ($F(1, 56) = .02, p > .10$) as independent predictors showed that men’s overall body esteem did not depend on any of these factors.

The above results of the interaction effects of BMI and exposure conditions disconfirmed hypothesis 3 stating, that participants with greater body weight (overweight and obese) will perceive their bodies to be significantly larger and

will have a lower overall body esteem after viewing advertisements highlighting women's idealized bodies. Our results were quite opposite. We found that after exposure to female ads implicit body perception of obese participants was thinner and women's overall body esteem was greater than in the control condition.

7.4.5 Race/ethnicity by exposure condition interactions

To test whether the effect of exposure differed by race/ethnicity (Hypothesis 4), we set up a 2 (exposure condition: female ads and car ads) x 5 (race/ethnicity: Asian, African American, Hispanic, White, Other) factorial model. Two univariate between-subjects ANOVAs revealed no significant condition by race/ethnicity interaction on implicit body perception ($F(4, 238) = 1.73, p > .10$) or overall body esteem ($F(4, 238) = .12, p > .10$). Due to the fact that African American (N=15) and miscellaneous race/ethnicity (N=20) groups were the least represented, we also tested a model including only Asian, Hispanic, and White participants. It did not return any significant interaction on implicit body perception ($F(2, 179) = 2.12, p > .10$) or overall body esteem ($F(2, 179) = .44, p > .10$). These results disconfirmed hypothesis 4 stating that the effects of exposure to advertisements highlighting women's idealized bodies will differ across race/ethnicity.

7.5 Discussion and conclusion

The above study revealed that viewing portrayals of idealized women did not have a main effect on participants' body perception or esteem. However, as suggested in prior research (Heinberg and Thompson, 1995; Mills et al., 2002; Smeesters and Mandel, 2006) effects of media exposure may not be as simple and several moderators of these effects have been identified (see Chapter 2). This study sought to test moderators suggested in prior work as well as to test the impact of two relatively novel variables - trait extraversion and emotional stability.

Against our expectation, we did not find that the level of extraversion or emotional stability (Roberts and Good, 2010) interacted with the exposure effects. All participants regardless of their level of these two personality traits reacted in

the same way to the manipulation. We did find, however, that two other personal variables moderated the effect of exposure.

The first moderation effect was by comparison tendency. We found that for participants who viewed control ads there was a negative relationship between one's comparison tendency and their overall body esteem. The higher was their tendency to compare themselves to media models, the lower was their overall body esteem. This is in agreement with prior research suggesting that higher comparison tendency is associated with more body dissatisfaction (Clay et al., 2005). On the contrary, no such relationship was found in participants who were in the idealized women condition. Also, we showed that for low comparison participants being in two different exposure condition was not associated with very different levels of overall body esteem. However, for participants with a high tendency to compare themselves to media models being in the idealized ads condition was associated with a higher overall body esteem than when being in the control ads condition (see Figure 7.2), which suggests a possible negative effect of car ads on these participants.

Another interesting result of the study was the finding that men's and women's BMI influences the effect of exposure to ads portraying idealized women. BMI was a moderator used in prior work but was often found not to interact with exposure (Barlett et al., 2005; Brown and Dittmar, 2005; Halliwell and Dittmar, 2004; Hamilton et al., 2007). Only a few researchers showed that BMI was an important moderator; participants with higher BMI reported more negative self-evaluations (Henderson-King and Henderson-King, 1997) and more weight-related anxiety (Brown and Dittmar, 2005) following exposure to idealized models. In this study, we found that implicit body perception of *obese* participants exposed to idealized women was thinner as compared to obese participants who viewed control images; whereas implicit body perception of *underweight* participants exposed to female images was heavier than the body perception of control participants (see Figure 7.3). The differences between conditions were not significant when tested separately for BMI groups due to reduced power of these tests, yet, the significant interaction suggests these differences are meaningful. Moreover, we found that

the overall body esteem in women exposed to portrayals of idealized women was marginally higher in normal weight women and marginally lower in overweight women than in control women. However, as seen in Figure 7.3 these differences were negligible. These findings are surprising, as we expected to find large differences depending on exposure only in participants with greater body weight (overweight and obese) as also shown by prior work. On the contrary, we found that exposure to idealized female portrayals had a sizable effect on both most extreme body weight groups, obese and underweight participants. Striking was the fact, that implicit body perception of obese and underweight participants was affected diametrically different by exposure to ads portraying idealized women. Exposure to idealized women had a negative contrast effect on underweight participants, who viewed themselves as heavier after exposure to female ads, and a self-enhancing effect on obese participants, who had a thinner implicit body perception following exposure to female ads. However, it is also possible to consider the effect female ads had on underweight women as a positive one; viewing idealized models encouraged women to see themselves as larger, or healthier in their case. Our results are thus opposite to Collin's (1996) expectation that self-enhancement was likely to be found in thin women only, because they are close to the portrayed ideal. On the contrary, we found that obese participants might be the one experiencing self-enhancement, or the so-called 'fantasy effect' of advertising, by imagining themselves in a body closer to the sociocultural ideal. Viewing images of thin and attractive models led obese participants to implicitly perceive their own bodies as thinner. This study suggests that researchers should continue to include BMI in their analyses as it interacts with the effects of exposure, especially in the more extreme populations, that may be of special interest to researchers but also health practitioners who are dealing with men and women suffering from eating disorders. They seem to be a particularly vulnerable population to the effects of idealized advertising portrayals and may need special intervention programs or counseling.

Men's and women's overall body esteem, but not their implicit body perception, was significantly different and hence, we ran some of our analyses separately for men and women (only those involving body esteem as the dependent variable).

Overall, the pattern of results of exposure on body esteem and implicit body perception was the same in men and women; except that we were not able to test the moderation effect of BMI (categorical) on men's overall body esteem due to having too few participants in two BMI groups. We also did not find any differences in the effects of exposure across race/ethnicity, which disconfirmed our hypothesis.

One limitation of this study's design is that we used two dependent variables, implicit body perception and explicit body esteem, which were measuring potentially independent constructs. While body perception is more of a cognitive measure reflecting the strength of association of the 'heavy' and 'light' concepts with the self; the overall body esteem is an affective measure reflecting a positive or negative attitude towards one's own body. Unlike in Chapters 3 and 4 where we investigated exposure effects on implicit and explicit self-esteem. This lack of a direct match between the implicit and explicit outcome variables did not allow us for a direct comparison.

Another limitation is the measurement of potential moderator variables at the end of the experimental session, that is after manipulation (exposure) and the dependent variables. This ordering suggests that these variables could be also treated as dependent variables. The rationale of placing these measure at the end was to avoid informing participants about what the study was about. Asking participants' upfront about their body weight and comparison tendencies would have obscured the purpose of the study and could have decrease the effects of exposure manipulation. We also assumed that personality traits, one's comparison tendency, and body size reports are stable over time and would not be affected by manipulation. Yet, it is possible that the way participants *reported* this information was not completely unaffected by exposure. This problem of placing potential moderating variables at the beginning or the end of the study will be resolved by the two-part study methodology described in Chapter 8.

Part V

Exploring media exposure effects using a two-factor design

Chapter 8

Effects of exposure on women's self-esteem, body esteem, and body perception

8.1 Introduction

In studies reported above (Chapters 3, 4, 7) we did not find many negative effects of exposure to idealized body portrayals on men's and women's self and body image. These results were surprising in the light of prior work which reported numerous instances of negative exposure effects (Barlett et al., 2008; Grabe et al., 2008). Also, as described in Chapter 4, we found that viewing idealized male and female bodies had self-enhancing rather than negative effects on men. Even though the literature presents mostly negative effects of exposure to idealized body portrayals it also includes studies that found positive effects (Coolican, 1999; Cusumano and Thompson, 1997; Mills et al., 2002; Myers and Biocca, 1992), as well as a few null results (Dens et al., 2009; Henderson-King et al., 2001; Irving, 1990; Lin and Kulik, 2002). While it is possible that our previous results reflect insufficient statistical power or sampling variation, these dramatically mixed findings in the broader literature can also indicate that media effects are not as straightforward or universal as might have been assumed. Indeed, challenging the

underlying assumption that *all* women respond to idealized body portrayals in the same way, we reviewed a growing number of studies investigating exposure effects in women showing that personal differences like women's initial body satisfaction or internalization of sociocultural ideals moderate their reactions to media portrayals (Chapter 2). Thus, it is possible that the complexity in the overall pattern of findings in this area is the result of insufficient attention to these moderating factors.

The following experiment will attempt to answer three out of four dissertation research questions, that is, whether the effects of media exposure to idealized body portrayals depend on women's race/ethnicity (RQ 2; demographic moderator) and personality traits (RQ 4; personal moderator). We will use two implicit methods and two corresponding explicit measures of self-esteem and body perception (explicit: actual-ideal body discrepancy). These four measures and in addition body esteem will be the study's outcome variables. We expect that implicit measures will reveal a different pattern of results than the explicit ones (RQ 3; Hypothesis 1).

In addition to addressing these major research questions the following study has four further contributions. First, we will use a two-factor design with one between-subjects (two exposure conditions) and one within-subjects factor (pretest and posttest scores) as opposed to one factor between-subjects designs used in previous studies (Chapters 3, 4, 7). A repeated measures design is useful in the case of such complexity of exposure effects by allowing us to identify which women react to idealized portrayals positively, negatively, and which ones are not responsive at all. To our knowledge, this design has not been previously used in the study of media exposure effects. Second, in addition to the moderators specified by the dissertation research questions we will explore the moderating role of body weight, comparison tendency, and internalization of sociocultural ideals. Moreover, we will include two novel potential moderators, media exposure and socioeconomic status, which have not been studied in prior work (see Chapter 2). Third, we will collect data on all moderating variables *before* priming with advertisements. Participants will complete these measures before figuring out what the study is all about, there-

fore, decreasing the demand characteristics on moderator variables. In prior work, moderating variables were almost always given at the end of the experiment, and subjects' responses might have been influenced by participants' knowledge of the study's purpose. Participants may have guessed the study's purpose not just by viewing advertisements but by completing all body-related items (see also Chapter 7). Forth, in this study, we will combine all of the dependent measures used in previous studies to provide a broader picture of advertising influences. They will be used both as pretest and posttest measures. An overview of all dependent and moderating variables of the study is presented in Figure 8.1. Below we discuss in detail the utility of each one of these potential moderators.

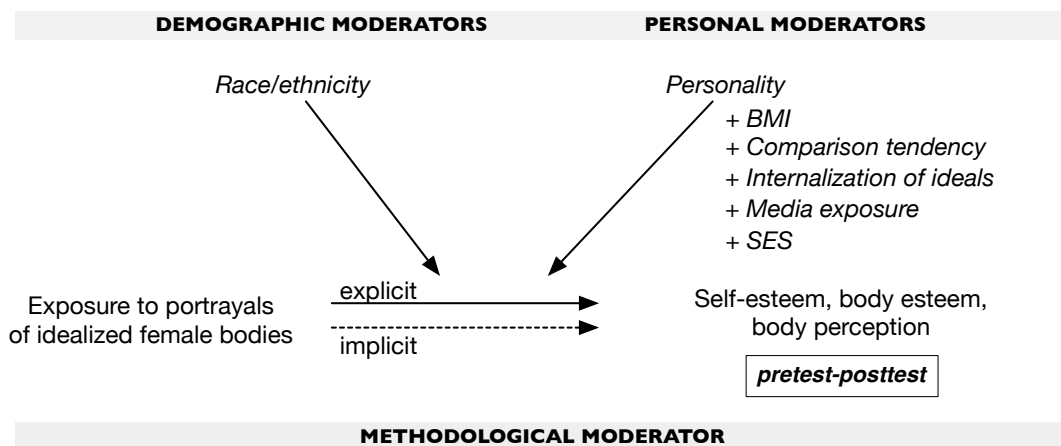


Figure 8.1: Overview of the experimental design of the study reported in Chapter 8 highlighting its major contributions.

8.1.1 Women's race/ethnicity

As discussed at length above (Chapters 1, 3, 4), we expect exposure effects to differ according to women's race/ethnicity (Hypothesis 2). Due to the fact, that the literature can support a prediction of greater or lesser media exposure effects in ethnic-minority women as compared to White women, we have not specified more detailed hypotheses.

8.1.2 Personality

From prior work we know that personality traits (in particular extraversion, conscientiousness, and emotional stability) are positively correlated with women's self-esteem (Watson et al., 2002). These three traits are also related to body dissatisfaction and body esteem (Kvalem et al., 2006). However, as we showed in Chapter 6 these relationships are mediated by self-esteem. Nevertheless, these three personality traits (extraversion, conscientiousness, and emotional stability) are interacting with self and body image related measures and we will include them in the study as potential moderators of exposure effects. In a study reported in Chapter 7, however, we did not find evidence for a moderation effect of extraversion or emotional stability.

We expect that women with a higher level of extraversion, conscientiousness, and emotional stability will react less negatively to the portrayals of idealized bodies (Hypothesis 3). Neurotic individuals (i.e., with a low emotional stability) are considered to be more likely to experience negative emotional states and therefore may be particularly vulnerable to and exhibit the most negative consequences of exposure (Roberts and Good, 2010). Moreover, neurotic individuals tend to exhibit higher levels of body dissatisfaction and lower body esteem than their emotionally stable counterparts (Davis, 1990b; Davis, 1990a). Highly extraverted women are expected to be more active, outgoing, and more positive about their appearance (Kvalem et al., 2006) and therefore will not experience the negative effects of exposure to the same extent as introverted participants. Finally, more conscientious women are also expected to experience fewer negative effects because they possess a higher level of self-esteem and body esteem than their less conscientious counterparts (Watson et al., 2002).

8.1.3 Body weight

We decided to include women's body weight (measured using the Body Mass Index; BMI) in our study because this personal moderator has been often used in prior work but received mixed support (see Chapter 2). It is also probably one of the most intuitive personal moderators of exposure effects. Following Social

Comparison Theory, negative contrast effects are expected for heavier women (Hypothesis 4), who are likely to perceive a larger discrepancy between the self and the ideal and therefore may be more dissatisfied with their bodies than thinner women, who are closer to the ideal (Collins, 1996; Henderson-King and Henderson-King, 1997). However, one could expect that whereas heavier women's more negative self-evaluations would result from contrast effects, thinner women's self-evaluations might be a result of self-enhancement. This is due to the fact that heavier women are likely to compare themselves downwardly to the advertising models (Festinger, 1954), while thinner women who are close to the thin ideal might imagine themselves in their ideal body through an inspirational effect (Collins, 1996). A few studies showed that heavier women were more negatively affected by exposure than thinner women (Brown and Dittmar, 2005; Henderson-King and Henderson-King, 1997) but others did not support these findings (Barlett et al., 2005; Halliwell and Dittmar, 2004; Hamilton et al., 2007). We will explore the role of women's body weight in the following experiment to further evaluate its usefulness.

8.1.4 Comparison tendency

Women's tendency to compare themselves to media models is expected to play a role in moderating the effects of media exposure. Like the BMI, this variable is related to Social Comparison Theory (SCT; Festinger, 1954), which asserts that the majority of women are likely to engage in upward comparison to models seen as superior to them (Festinger, 1954). These types of comparisons were found to often result in increased emotional distress and decreased self-esteem (Major et al., 1991). Therefore, we could expect that women with a stronger comparison tendency would experience more negative effects of media images (Hypothesis 5; see also Chapter 7).

8.1.5 Internalization of sociocultural ideals

Thompson and colleagues (1999) defined *internalization* as the extent to which an individual cognitively 'buys into' societal standards, especially the thin-

ideal, to the point of changing one's behavior in an effort to approximate these standards. These authors also believe that women who internalize the sociocultural ideals are more likely to use thin and attractive advertising models as upward comparison targets (Heinberg and Thompson, 1992) and may therefore feel inferior and dissatisfied after exposure to such media images due to not meeting the desired ideal. Therefore, we expect that women who have internalized the sociocultural ideals to a large extent will experience more negative effects of advertising exposure than women with low levels of internalization (Hypothesis 6). This moderator received good support in prior literature (see Chapter 2). We will explore further the possibility that sociocultural ideals play a moderating role of media exposure effects.

8.1.6 Media exposure

Cultivation theory (Gerbner, 1969) asserts that media 'cultivate' beliefs and attitudes and that people who view a lot of mass media messages are likely to adopt the media-portrayed reality to a greater extent. Empirical correlational work supports this by demonstrating that, for instance, the overall amount of television viewing is a significant predictor of the drive for thinness and muscularity (Tiggemann, 2005), body dissatisfaction (Harrison and Cantor, 1997; Tiggemann, 2003), body ideals (Swami et al., 2010), or gender role stereotyping and attitudes (Morgan, 1987; Morgan, 1982). However, as reviewed in Chapter 2, media exposure has not been taken into consideration in prior experimental studies. Based on the Cultivation theory, however, it should be included as individuals more often exposed to idealized body portrayals are likely to internalize these ideals to a larger extent and consequently be more reactive to them (Hypothesis 7).

8.1.7 Socioeconomic status

Socioeconomic status (SES) can be defined as 'a composite measure that typically incorporates economic status, measured by income; social status, measured by education; and work status, measured by occupation' (Dutton and Levine,

1989, p. 30). SES indicators are typically included in studies from several research fields. They are taken into consideration especially often in health psychology because they are important predictors of various health indicators, including stress level, depression, and body fat distribution (Adler et al., 2000; Kopp et al., 2004). SES also predicts rates of mortality and morbidity from almost every disease or condition (Adler et al., 1994; Antonovsky, 1967; Illsley and Baker, 1991). The study of exposure effects on women's self and body image tackles aspects of health and therefore we decided to include SES in this research as well. This variable has not been included in any prior studies on the effects of exposure to idealized body portrayals (see Chapter 2). SES was included in a recent correlational study which found that it was a predictor of men's and women's body dissatisfaction in Austria, Malaysia, and South Africa (Swami et al., 2010). The operationalization of SES in this study was, however, quite problematic - low SES was established based on a distinction between participant's rural/urban residence. Even though, in general, rural areas as compared to urban regions might have lower income and lower education, it seems like limiting SES to the rural/urban distinction is an oversimplification. We hope to provide further insights into the role of SES in exposure effects and body dissatisfaction by studying individual's subjective and objective SES.

8.2 Method

8.2.1 Participants

One hundred and ninety two female undergraduate students (age $M = 19.39$, $SD = 3.08$) from a small U.S. university volunteered to participate in the experiment in exchange for partial credit for their introductory psychology course requirement. 92 were Hispanic (47.9%), 69 Asian (35.9%), 31 White (16.1%). This distribution reflects this university's diverse student population.

8.2.2 Procedure

When participants first arrived at the lab (Time 1), they signed a consent form and filled out an online questionnaire including all explicit dependent measures as well as all moderator variables (see Table 8.1). Next, participants were asked to do two categorization tasks that investigated how people classify words (Implicit Association Test; one measuring self-esteem and the other body perception). After their completion, participants were released. For their next appointment, participants came to the lab exactly 7 days later (Time 2) and were randomly assigned to one of the two conditions: exposure condition with female ads, or a neutral exposure condition presenting car ads (control). Students participated individually in three ostensibly unrelated tasks. First, a priming task containing television advertisements was introduced as part of a marketing study of products advertised on television. Participants viewed the ads and answered questions relating to them. Second, all participants were asked to do two categorization tasks that investigated how people classify words (Implicit Association Tests measuring self-esteem and body perception). Third, participants completed an online questionnaire containing all explicit dependent measures. These two sets of measures (implicit and explicit) were identical to those used at Time 1. The entire experiment took approximately 50 minutes to complete (Part 1: 20 minutes; Part 2: 30 minutes). The order of individual measures was not counterbalanced as we did not have any theoretical grounds to expect their order to matter. Prior studies which used two order conditions (Chapters 5 and 6) did not find any order effects. Figure 8.2 presents the experimental design of the study. It was a two-factor design with one between-subjects factor (two exposure conditions) and one within-subjects factor (pretest and posttest scores).

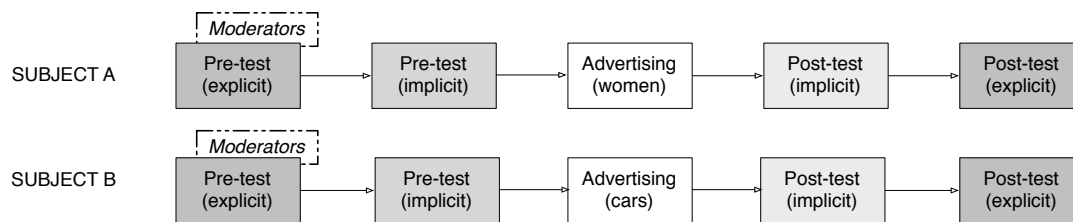


Figure 8.2: Experimental design of the study (2 factors: one between-subjects and one within-subjects).

8.3 Materials

8.3.1 Priming task

Participants assigned to the first exposure condition watched 8 U.S. TV advertisements of women’s fragrances (e.g., Dior), underwear (e.g., Victoria’s Secret), or beachwear (e.g., Old Navy). All of these ads highlighted women’s thin and attractive bodies (see Appendix B.1). The second exposure condition was a control condition which included 8 U.S. advertisements of cars (e.g., Audi TT, Honda Element) which did not portray any people in them (see Appendix B.3). These ads were neutral, that is, did not convey any information relevant to one’s body or any other characteristic of a person. Each ad lasted between 30 and 60 seconds and the overall exposure time in each of the conditions was approximately 6 minutes. Ads were presented in one order only. To strengthen the cover story of a ‘marketing study of advertising effectiveness’ participants were asked to rate each ad on four criteria (good, likable, enjoyable, attention-getting) using a 7-point Likert-type scale. In addition, subjects were asked two questions about their buying behavior: Have you ever bought the advertised product? and Would you buy the product based on the ad shown? (adopted from Rudman and Borgida, 1995).

8.3.2 Implicit dependent measures

The following two tasks served as the implicit dependent measures and were included both at Time 1 and Time 2 of the study, that is, before and after priming

Table 8.1: Overview of the measures used at Time 1 and Time 2 of the experiment.

	Time 1	Time 2
Moderators (IVs)	Race/ethnicity, personality (TIPI), BMI, comparison tendency, internalization of sociocultural ideals (SATAQ), media exposure, objective and subjective SES	
Explicit DVs	Explicit self-esteem (RSES, FT, LS), body esteem (BES), actual-ideal body discrepancy (PBIS)	
Implicit DVs	Implicit self-esteem (IAT), implicit body perception (IAT)	
<i>Priming</i>		Cond. 1 - Ads portraying idealized women Cond. 2 - Neutral ads (cars)
Implicit DVs		Implicit self-esteem (IAT), implicit body perception (IAT)
Explicit DVs		Explicit self-esteem (RSES, FT, LS), body esteem (BES), actual-ideal body discrepancy (PBIS)
<i>Note.</i> IVs - independent variables, DVs - dependent variables.		

with TV ads (see Table 8.1).

Implicit self-esteem. The Implicit Association Test (IAT; Greenwald, McGhee, & Schwarz, 1998) was used to measure implicit self-esteem. The IAT is a response latency measure of dichotomous categorization, in which participants rapidly classify four kinds of stimuli using just two response buttons. In the present case, participants might press a left response button in response to self-related words and positive adjectives, and a right response button in response to other-related words and negative adjectives. In a second block of trials, the pairings are reversed such that self-related words would now be paired with negative adjectives and other-related words with positive adjectives. The logic of the IAT is that semantically associated categories will be more rapidly categorized when they share a response key. If participants have a positive association with the self, they will be faster when the self-related words share a key with positive adjectives, and slower when they share a key with negative adjectives. By computing an effect size to measure the degree of facilitation during this pairing, we can produce a measure of implicit self-esteem. Thus, the self-esteem IAT consisted of words relating to self (target words: I, me, my, mine, self), other (them, they, their, theirs, others), pleasant (joy, warmth, gold, happy, smile, pleasure), and unpleasant (gloom, agony, pain, stink, filth, death). The self-esteem IAT and all its stimuli were de-

veloped by Greenwald et al. (2002). In our study we used a standard five-block IAT and employed the revised scoring algorithm validated with large data sets (Greenwald et al., 2003). This scoring procedure produces an effect size measure for each participant, the IAT D , with positive values representing positive implicit self-esteem. This test was also used in experiments reported in Chapters 3 and 4 where we discussed in more detail its validity and reliability.

Implicit body-perception. The IAT described above was also used to measure implicit body perception. This test was identical to the self-esteem IAT with the exception that we used two new word categories. Body perception IAT consisted of words relating to self (I, me, my, mine, self), other (them, they, their, theirs, others), thin (anorexic, underweight, thin, light, slim), and heavy (heavy, fat, obese, large, big). The adjectives were selected in such a way that the set of words for ‘thin’ and ‘heavy’ categories contained words with both positive and negative valence (based on a pretest). As in the previous case, we employed the revised scoring algorithm (Greenwald et al., 2003). This scoring procedure produces an effect size measure for each participant, the IAT D , with positive values representing a thinner implicit body-perception.

8.3.3 Explicit dependent measures

Explicit dependent measures, presented below, were included in both parts of the study, once before and once after the implicit tasks (see Table 8.1).

Self-esteem. Just like in the previous studies (Chapters 3 and 4) we used three procedures to measure explicit self-esteem: a feeling thermometer (sliding scale), a standard self-esteem inventory - Rosenberg’s (1965) Self-Esteem Scale (RSES), and a Likert-like rating scale. This selection was adopted from the study by Greenwald et al. (2002). First, participants were asked to mark how warmly/favorably they feel about *themselves* and about *other people* by placing a horizontal mark on the feeling thermometer that had three anchors: 0 (*cold/unfavorable*), 50 (*neutral*) and 100 (*warm/favorable*). The final score was achieved by subtracting the

temperature for the *other people* from that of *oneself* (see Appendix A.3). Next, we used Rosenberg's (1965) self-esteem questionnaire that includes 5 positive and 5 negative self-descriptive statements. We added additional four items to the original scale which were statements about one's health (e.g., *I think I exercise enough every week*, or *I am concerned about my health*), in order to motivate participants to believe the questionnaire was related to Health Psychology (see Appendix A.4). Participants were asked to report how much they agree with each of the 14 statements on a 4-point Likert scale (1 - *strongly agree*, 4 - *strongly disagree*). The sum of the ratings assigned to all the items, after reverse scoring the positively worded items, indicated one's self-esteem level. Scores ranged from 0 to 30; higher scores indicating higher self-esteem. Finally, we used a questionnaire which consisted of 6 unpleasant-meaning and 6 pleasant-meaning words previously appearing in the IAT (Greenwald et al., 2002). Participants rated how characteristic of them each of these words was on a 7-point Likert-type scale (anchors 1 - *not at all characteristic of you* and 7 - *extremely characteristic of you*, see Appendix A.5). The final score was constructed by subtracting the average score for the unpleasant words from that for the average for pleasant words. The scores obtained using these three procedures were planned to be combined into one index of explicit self-esteem following previous research that suggested their high inter-correlations (Greenwald et al., 2002; Olson et al., 2007).

Body esteem. Participants' body esteem was measured using the Body Esteem Scale (BES; Franzoi and Shields, 1984). Participants were given a list of 35 body parts and functions (e.g., lips, hips, body scent, agility) and were asked to indicate how they felt about each of them (see Appendix A.8). Participants' overall body esteem score was calculated by adding up scores for all items. The higher one's summed score, the more positive their body esteem. The reliability and validity of the BES has been discussed in Franzoi and Shields (1984) and Franzoi (1994).

Actual-ideal body discrepancy. Actual-ideal body discrepancy was measured using a Pictorial Body Image Scale (Stunkard et al., 1983). This scale consists of 9 drawings of women's figures ranging from extremely thin to extremely heavy pre-

sented in a horizontal row (see Appendix A.2). Participants were asked to answer the following four questions: (1) Which drawing looks most like your own figure? (actual body image), (2) Which figure do you most want to look like? (own body ideal), (3) Which figure do you think most women want to look like? (own sex ideal body), (4) Which figure do you think most men find most attractive? (opposite sex body ideal) (after Cohn and Adler, 1992). Next, we calculated women's actual-ideal discrepancy score by subtracting participants' composite ideal body image (average of the last three questions) from their actual body image. Positive scores indicate that one's actual body image is larger than a desired body image, while negative scores indicate that one is thinner than desired (after Lavine, Sweeney, and Wagner, 1999).

The above three measures of self-esteem were considered an explicit equivalent of implicit self-esteem (IAT), whereas actual-ideal body discrepancy was considered an explicit equivalent of implicit body perception (IAT).

8.3.4 Explicit independent measures

All of the following measures were considered potential moderators of advertising exposure effects and were included in the first part of the study (Time 1), that is, prior to priming (see Table 8.1). For a detailed overview of the scoring of all explicit measures (dependent and independent), see Appendix A.1.

Personality. We administered the Ten-Item Personality Inventory (TIPI; Gosling, et al., 2003), which measures personality traits on five commonly used dimensions, the so-called 'Big Five'. In this questionnaire, participants were to indicate how strongly they associate ten pairs of characteristics with the self, for instance, 'extraverted, enthusiastic' or 'calm, emotionally stable' (see Appendix A.11). Two pairs of adjectives corresponded to each personality dimension of the 'Big-Five' factor model (agreeableness, openness, extraversion, conscientiousness, emotional stability). To arrive at each individual's personality traits an average rating for each pair of adjectives was calculated.

Comparison tendency. Participants' tendency to compare themselves to media models was measured using a Comparison to Models Survey developed by Strowman (1996). Participants were to indicate how often they engage in different types of comparisons with media models. The sum of their responses indicated a strength of one's comparison tendency (see details in Appendix A.9).

Internalization of sociocultural ideals. A 35-item questionnaire was used to measure participants' awareness and internalization of the sociocultural ideals (Sociocultural Attitudes Towards Appearance Questionnaire - SATAQ; Cusumano and Thompsom, 1997). These two constructs are considered separate and do not correlate with each other (Heinberg et al., 1995). Participants were to complete the entire including the awareness subscale, even though we are interested in the internalization subscale only. Participants were asked to answer questions like 'I believe clothes look better on thin models' (internalization item) or 'In today's society, it's not important to always look attractive' (awareness item, see Appendix A.10). We were not interested in the awareness subscale, but included it because it constitutes one scale together with internalization.

Media exposure. Next, we asked participants to report their mass media exposure. Three questions were designed to capture the differences in participants' media exposure:

- Altogether, about how many hours a day do you usually spend watching TV (including morning, afternoon, and evening)?
- Altogether, about how many hours a day do you usually spend surfing the Internet (including music or video websites, social networking sites, emails)?
- Altogether, about how many hours a day do you usually spend reading or browsing through magazines (including news, sports, fitness, arts, women's or men's magazines)?

Participants indicated an approximate number of hours they spend a day on each of these three activities. We summed the number of hours for exposure to the above three mass media and created an overall media exposure score.

Objective SES. To measure participants' objective socioeconomic status (SES), we asked them to indicate their family's approximate annual household income (using 8 pre-defined brackets, first one '\$0 - \$5,000', and the last one '\$200,000 or more').

Subjective SES. In addition to objective SES, participants' subjective SES was measured using the MacArthur Scale of Subjective Social Status (Goodman et al., 2001). This scale was developed to capture the common sense of social status across the standard SES indicators (income and education). It presents a 'social ladder' (see Appendix A.12) and asks individuals to place an 'X' on the rung on which they feel they stand. As recommended by the authors, we utilized two versions of the ladder, one linked to traditional SES indicators (SES ladder) and the second linked to standing in one's community (community ladder). The difference between these two ladders may be of particular interest in communities in which individuals may not be high on the SES ladder in terms of income, occupation, or education (e.g., poorer communities, students), but may have high standing within social groups such as a religious or local community. Participants completed the community ladder first in order to avoid their answers being keyed to the SES indicators described in the SES ladder. We expect a weak positive correlation between subjective and objective SES (Goldman et al., 2006).

Other variables. Finally, participants were asked to report their demographic information (gender, age, race/ethnicity), as well as height and weight used to calculate their Body Mass Index ($BMI = 703 \times \frac{weight(lb)}{height^2(in^2)}$). As mentioned before, this is a reliable way of measuring BMI as research demonstrated that self-reported weight and height differ only by 1-3.5% from individuals' actual weight and height (Bowman and DeLucia, 1992).

8.4 Results

8.4.1 Data reduction

Fourteen women were excluded from the analysis because they did not attend Part 2 of the study (attrition 7.3%). Following the revised scoring algorithm for the IAT (Greenwald et al., 2003), we excluded one or more IAT scores of 17 women who had too many (10% or more) short responses ($< 300ms$) in at least one out of four IAT tests, indicative of hitting the keys without having enough time to consciously categorize the stimuli. This task disengagement suggests that these participants were not taking the test(s) seriously. We have excluded women's scores for individual IAT tests but kept their remaining scores. Therefore, the final sample included 178 women.

8.4.2 Creating indices

Correlations among the different measures of explicit and implicit self-esteem at Time 1 and Time 2 were computed. As presented in Table 8.2, not all of the explicit measures at Time 1 correlated with each other. There was a small to moderate positive correlation between Rosenberg Scale of Self-Esteem (RSES) and the other two explicit measures, however, the feeling thermometer and the Likert-like scale were not correlated with each other. Given the poor reliability of RSES and the Likert-like scale (Standardized item $\alpha = .45$), we were unable to create a composite index of self-esteem.

At Time 2, all explicit measures of self-esteem correlated with each other (see Table 8.2), however, we did not create a composite index of self-esteem due to the poor reliability of these three measures (Standardized item $\alpha = .22$ for all measures; $\alpha = .53$ excluding the feeling thermometer).

In agreement with previous studies (Bosson et al., 2000; Spalding and Hardin, 1999) which showed that the implicit (IAT) and explicit measures of self-esteem were uncorrelated, we also did not find a correlation between implicit and explicit measures of self-esteem at Time 1 or Time 2.

Table 8.2: Zero-order correlations between explicit and implicit measures of self-esteem at Time 1 and Time 2.

<i>Measure</i>	IAT	RSES	Feeling thermometer	Likert-like scale
IAT	[.42***]	.03	-.16	.02
RSES	.07	[.85***]	.24**	.56***
Feeling thermometer	.05	.24**	[.40***]	.06
Likert scale	.11	.68***	.19*	[.74***]

Note. Correlations for measures at Time 1 are *above* the diagonal, whereas the correlations for measures at Time 2 are *below* the diagonal. Correlations between the same measures at Time 1 and Time 2 are shown in brackets on the diagonal. IAT - Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998), RSES - Rosenberg (1965) Self-Esteem Scale.

Basis: $166 \leq n \leq 178$ women (pairwise).

* $p < .05$, ** $p < .01$, *** $p < .001$ (Pearson).

8.4.3 Descriptive statistics

At Time 1, women in our sample had on average a positive explicit and implicit self-esteem, a moderately high body esteem, considered their body size to be on average one size larger than their ideal (see Appendix A.2), and had a thin implicit body perception (see Table 8.3; more information on scoring in Table A.1). Paired-samples t -tests showed that the implicit ($t(171) = 26.51, p < .001$) as well as three explicit measures of self-esteem (RSES $t(177) = 15.05, p < .001$; feeling thermometer $t(177) = -27.70, p < .001$; Likert $t(177) = -6.20, p < .001$), body esteem ($t(177) = 6.88, p < .001$), actual-ideal body discrepancy ($t(177) = 12.03, p < .001$), and implicit body perception ($t(168) = 13.09, p < .001$) were different from their rational midpoints.

At Time 2, explicit self-esteem (measured by the feeling thermometer and Likert-like scale), body esteem, actual-ideal body discrepancy, and implicit body perception did not differ significantly from the data at Time 1. However, women's average explicit self-esteem measured by RSES ($t(177) = -2.17, p < .05$) was slightly higher and implicit self-esteem ($t(164) = 3.18, p < .01$) was lower at Time 2 than at Time 1 (see Table 8.3).

In order to compare the scores of the dependent variables across racial/ethnic groups, we conducted one-way between-subjects ANOVAs with race/ethnicity as

Table 8.3: Observed means (with standard deviations) of dependent variables reported at Time 1 and Time 2.

<i>Variable</i>	Time 1			Time 2		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Self-esteem (RSES)*	20.26	4.66	178	20.70	5.06	178
Self-esteem (Feeling therm.)	6.22	21.08	178	4.69	19.89	178
Self-esteem (Likert-like scale)	3.38	1.32	178	3.53	1.51	178
Implicit self-esteem (IAT)**	.61	.30	172	.53	.27	166
Body esteem (BES)	115.66	20.68	178	115.01	21.67	178
Actual-ideal body discr. (PBIS)	.88	.97	178	.85	.96	178
Implicit body perception (IAT)	.32	.32	169	.33	.34	164

Note. BES - Body Esteem Scale (Franzoi and Shields, 1984); IAT - Implicit Association Test (Greenwald et al., 1998); PBIS - Pictorial Body Image Scale (Stunkard et al., 1983); RSES - Rosenberg (1965) Self-Esteem Scale.

* $p < .05$, ** $p < .01$ (paired samples t -test).

an independent factor. There were no significant effects of race/ethnicity on women's explicit self-esteem (Time 1 - feeling thermometer $F(2, 175) = 1.33, p > .10$; Likert $F(2, 175) = 2.00, p > .10$; Time 2 - feeling thermometer $F(2, 175) = 1.00, p > .10$; Likert $F(2, 175) = 1.90, p > .10$), implicit self-esteem (Time 1 $F(2, 169) = 2.06, p > .10$; Time 2 $F(2, 163) = 1.56, p > .10$), body esteem (Time 1 $F(2, 175) = .72, p > .10$; Time 2 $F(2, 175) = 1.64, p > .10$), actual-ideal body discrepancy (Time 1 $F(2, 175) = 1.27, p > .10$; Time 2 $F(2, 175) = .73, p > .10$), and implicit body perception (Time 1 $F(2, 166) = 2.94, p > .05$; Time 2 $F(2, 161) = 1.06, p > .10$). However, we found that women's explicit self-esteem measured using RSES (Time 1 $F(2, 175) = 10.32, p < .001$; Time 2 $F(2, 175) = 11.07, p < .001$) differed significantly by race/ethnicity. Post hoc comparisons (Tukey HSD) at Time 1 indicated that the mean explicit self-esteem of Asian women ($M = 18.41, SD = 4.50$) was significantly lower ($p < .001$) than the one of Hispanic women ($M = 21.71, SD = 4.26$). Self-esteem of Hispanic and White women ($M = 20.50, SD = 4.77$), as well as White and Asian women, did not differ from each another ($p > .10$). Post hoc comparisons (Tukey HSD) at Time 2 revealed that the mean explicit self-esteem of Asian women ($M = 18.56, SD = 5.03$) was significantly lower than the one of Hispanic women ($M = 22.17, SD = 4.35; p < .001$) and White women ($M = 21.54, SD = 5.41; p < .05$), who did not differ from one another ($p > .10$).

Women in our sample were on average conscientious ($M = 5.51, SD = 1.11$), emotionally stable ($M = 4.55, SD = 1.25$), and extraverted ($M = 4.27, SD = 1.29$). They have internalized sociocultural ideals to a moderate extent ($M = 33.57, SD = 5.86$) and reported a low average tendency to compare themselves to media models ($M = 17.65, SD = 6.09$). Women reported spending daily on average almost eight hours viewing TV, surfing the Internet, and browsing through magazines ($M = 7.82, SD = 3.88$; TV $M = 1.95, SD = 1.44$; Internet $M = 4.63, SD = 2.74$; magazines $M = 1.24, SD = 1.37$). Our sample was representative of all BMI categories: approximately 54% of women were of normal-weight; 23% of women were overweight; 13% of women were obese; and 10% of women were underweight (average BMI $M = 24.22, SD = 4.88$). The median and the mode annual household income of women was between \$25,000 and \$50,000. Most often women in our sample considered themselves to stand at the 5th rung of the SES ladder (both mode and the median) and the 6th rung of the community ladder (see Appendix A.12). The scores on the SES and community ladders were weakly correlated with each other ($r_s = .39, p < .001, N = 178$; Spearman). Family's approximate annual household income (objective SES) was also weakly correlated ($r_s = .19, p < .01, N = 178$) with the SES ladder (subjective SES). A correlational matrix presenting relationships between all dependent and independent variables in the study (excluding race/ethnicity) is presented as a reference in Table 8.4 at the end of the chapter.

8.4.4 Main effects of media exposure

Six two-way mixed ANOVAs with one repeated measures factor (i.e., each dependent variable in the study measured at Time 1 and Time 2) and one between-subjects factor (2 exposure conditions) were conducted to determine the effect of exposure to female versus car ads on each of the dependent variables. There were no significant time by exposure condition interactions on implicit ($F(1, 176) = .13, p > .10$) and explicit self-esteem (feeling thermometer $F(1, 176) = .05, p > .10$; Likert $F(1, 176) = .05, p > .10$), body esteem ($F(1, 176) = .71, p > .10$), actual-ideal body discrepancy ($F(1, 176) = 1.40, p > .10$), and implicit body perception

($F(1, 156) = .04, p > .10$). To investigate the effect of exposure on explicit self-esteem measured using RSES we included race/ethnicity as a covariate (as reported above, women's explicit self-esteem measured by RSES differed by race/ethnicity). This analysis revealed a marginally significant time by exposure condition interaction on women's explicit self-esteem ($F(1, 175) = 3.06, p = .08$). At Time 1, women's explicit self-esteem scores were very similar in the two conditions (female ads $M = 20.19, SE = .53$; car ads $M = 20.20, SE = .53$); whereas at Time 2, it seemed as though women who viewed female ads ($M = 20.23, SE = .57$) had a slightly lower explicit self-esteem than women who viewed the control ads ($M = 21.26, SE = .56$). Additional univariate ANOVAs were conducted to test the main effect of condition on explicit self-esteem (RSES) separately for measurement at Time 1 and Time 2 (race/ethnicity was again included as a covariate). These analyses showed that women's explicit self-esteem was not significantly different across the two conditions at Time 1 ($F(1, 175) = .07, p > .10$) and Time 2 ($F(1, 175) = .46, p > .10$).

8.4.5 Moderation analyses

Race/ethnicity. To investigate whether the effects of exposure to idealized portrayals of women differed depending on women's race/ethnicity, we conducted for each dependent variable a two-way mixed ANOVA with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure condition and race/ethnicity). These analyses revealed no significant three-way interactions (time*condition*race/ethnicity) on women's implicit and explicit self-esteem, body esteem, and actual-ideal body discrepancy ($.01 \leq F \leq 1.91, p > .10$). However, there was a significant three-way (time*condition*race/ethnicity) interaction on women's implicit body perception ($F(2, 152) = 3.09, p < .05$). To further examine this pattern of results we ran two univariate ANOVAs with condition and race/ethnicity as two independent factors separately for implicit body perception at Time 1 and at Time 2, see Figures 8.3 and 8.4. The condition by race/ethnicity interaction on women's implicit body perception at Time 1 was not significant ($F(2, 163) = .36, p > .10$) but at Time 2 it reached significance

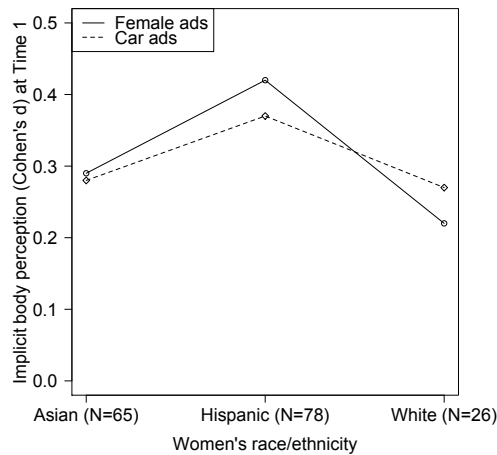


Figure 8.3: Exposure condition by race/ethnicity interaction on women's implicit body perception at Time 1 (predicted means).

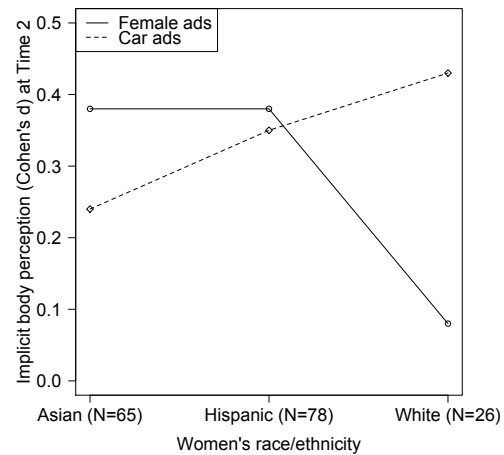


Figure 8.4: Exposure condition by race/ethnicity interaction on women's implicit body perception at Time 2 (predicted means).

($F(2, 158) = 4.83, p < .01$). These results indicated that after exposure to female ads Asian women had a thinner implicit body perception and White women had a heavier implicit body perception than after viewing control ads. There were no differences in Hispanic women's implicit body perception across the two conditions. To further examine this pattern of results additional independent samples *t*-tests with implicit body perception as the dependent variable and exposure condition as an independent factor were conducted separately for each racial/ethnic group. The results showed that exposure had a significant effect on the implicit body perception of White women only ($t(24) = -2.97, p < .01$) but no effect on Asian ($t(60) = 1.47, p > .10$) or Hispanic women ($t(74) = .33, p > .10$), even though the difference across the conditions in Asian women was approaching marginal significance ($p = .15$). These findings partially confirmed Hypothesis 2, stating that exposure effects will differ across race/ethnicity.

Personality traits. To explore the moderating role of extraversion for each dependent variable we conducted a two-way mixed ANOVA with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects

factors (exposure condition and extraversion). These analyses indicated no significant three-way interactions (time*condition*extraversion) on women’s implicit and explicit self-esteem, body esteem, actual-ideal body discrepancy, and implicit body perception ($.05 \leq F \leq 1.82, p > .10$).

Similar analyses revealed also no significant three-way interactions (time*condition*conscientiousness) on women’s implicit and explicit self-esteem (RSES), body esteem, actual-ideal body discrepancy, and implicit body perception ($.37 \leq F \leq 2.38, p > .10$). However, there was a significant three-way (time*condition*conscientiousness) interaction on women’s explicit self-esteem measured using the feeling thermometer ($F(2, 174) = 4.89, p < .01$) and a marginally significant three-way interaction on explicit self-esteem measured using the Likert-like scale ($F(2, 174) = 2.77, p = .06$). To explore these three-way relationships further, first

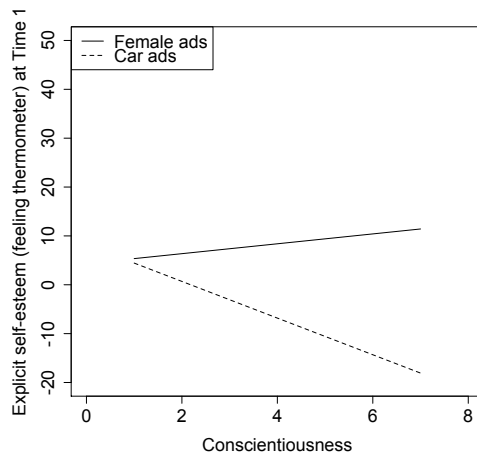


Figure 8.5: Exposure condition by conscientiousness interaction on women’s explicit self-esteem at Time 1 (multiple regression). *Note.* The values on the x -axis are limited to possible conscientiousness scores (1 – 7), see Appendix A.11.

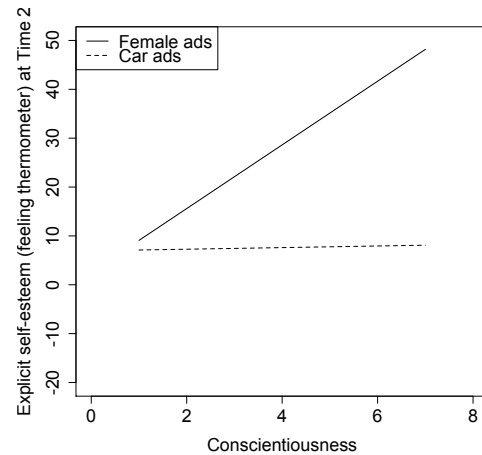


Figure 8.6: Exposure condition by conscientiousness interaction on women’s explicit self-esteem at Time 2 (multiple regression).

we conducted two multiple linear regressions separately for explicit self-esteem (measured using the feeling thermometer) at Time 1 and at Time 2. A multiple regression with conscientiousness, exposure condition, and an interaction of

the two showed that conscientiousness was a significant predictor of women's explicit self-esteem at Time 1 ($\beta = -.20, p < .05$), but the remaining two predictors were not significant ($-.09 < \beta < .16, p > .10$). A multiple regression with the same three predictors as above showed that exposure condition by conscientiousness interaction was a significant predictor of women's explicit self-esteem at Time 2 ($\beta = .23, p < .05$); conscientiousness and exposure condition were not ($-.11 < \beta < .01, p > .10$). As presented in Figure 8.6, in the female ads condition there was a weak positive correlation between women's conscientiousness and their explicit self-esteem ($r = .30, N = 89, p < .01$), whereas there was no significant correlation between conscientiousness and women's explicit self-esteem in the control condition (car ads; $r = .01, N = 89, p > .10$). There was also no significant correlation between women's conscientiousness and explicit self-esteem measured at Time 1 in any of the conditions (see Figure 8.5). These results suggest that in the female ads condition, the more conscientious women were the more positive explicit self-esteem they experienced.

Next, we conducted two multiple linear regressions separately for explicit self-esteem (measured using the Likert-like scale) at Time 1 and at Time 2. Two multiple regressions with conscientiousness, exposure condition, and an interaction of the two showed that conscientiousness was a significant predictor of women's explicit self-esteem at Time 1 ($\beta = .32, p < .01$) and Time 2 ($\beta = .32, p < .01$), but exposure condition and the interaction term were not significant predictors at Time 1 ($-.05 < \beta < .06, p > .10$) or Time 2 ($.04 < \beta < .05, p > .10$).

To explore the moderating role of the third personality trait, emotional stability, for each dependent variable we conducted a two-way mixed ANOVA with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure condition and emotional stability). These analyses indicated no significant three-way interactions (time*condition*emotional stability) on women's implicit and explicit self-esteem (feeling thermometer and Likert), body esteem, actual-ideal body discrepancy, and implicit body perception ($.24 \leq F \leq 2.02, p > .10$). However, we found a significant three-way (time*condition*emotional stability) interaction on women's explicit self-esteem

measured using RSES ($F(2, 174) = 3.24, p < .05$). Two multiple regressions with emotional stability, exposure condition, and an interaction of the two showed that emotional stability was a significant predictor of women's explicit self-esteem at Time 1 ($\beta = .44, p < .001$) and Time 2 ($\beta = .44, p < .001$), but exposure condition and the interaction term were not significant predictors at Time 1 ($-.01 < \beta < -.02, p > .10$) or Time 2 ($-.10 < \beta < .06, p > .10$). These findings only partially confirmed Hypothesis 3, stating that women with a higher level of extraversion, conscientiousness, and emotional stability will react less negatively to the portrayals of idealized bodies.

Body weight. In what follows we explored the moderating role of women's body weight (BMI). In the first set of analyses we used BMI as a continuous variable. We conducted for each dependent variable a two-way mixed ANOVA with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure condition and BMI). These analyses indicated no significant three-way interactions (time*condition*BMI) on women's implicit and explicit self-esteem (RSES and Likert-like scale), body esteem, actual-ideal body discrepancy, and implicit body perception ($.07 \leq F \leq 2.03, p > .10$). There was a significant three-way interaction (time*condition*BMI) on women's explicit self-esteem (feeling thermometer $F(2, 174) = 4.29, p < .05$). However, a multiple regression with BMI, condition, and an interaction of the two showed that none of these variables were significant predictors of women's explicit self-esteem at Time 1 ($-.09 < \beta < .01, p > .10$) or Time 2 ($-.17 < \beta < -.08, p > .10$).

In the second set of analyses, we converted women's BMI scores into categories, because in everyday life BMI is often used as a categorical variable. For instance, health practitioners use BMI to screen people for weight categories that may lead to health problems. There are four scientifically-derived and commonly used BMI categories: underweight ($BMI \leq 18.5$), normal weight ($18.5 < BMI < 25$), overweight ($25 \leq BMI < 30$), and obese ($BMI \geq 30$) (Center for Disease Control and Prevention, 2010). For each dependent variable we conducted separate two-way mixed ANOVAs with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure con-

dition and BMI). These analyses indicated no significant three-way interactions (time*condition*BMI group) on implicit and explicit self-esteem, body esteem, actual-ideal body discrepancy, and implicit body perception ($.50 \leq F \leq 1.48, p > .10$). Both sets of analyses disconfirmed Hypothesis 4 stating that heavier women experience more negative effects of exposure than their lighter counterparts.

Comparison tendency. In order to investigate whether the effects of exposure to idealized portrayals of women differed depending on women's comparison tendency, we conducted for each dependent variable a two-way mixed ANOVA with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure condition and comparison tendency). These analyses indicated no significant three-way interactions (time*condition*comparison tendency) on women's implicit and explicit self-esteem (RSES and Likert-like scale), actual-ideal body discrepancy, and body esteem ($.15 \leq F \leq 1.45, p > .10$). We found a significant three-way interaction (time*condition*comparison tendency) on women's explicit self-esteem measured using the feeling thermometer ($F(2, 174) = 5.06, p < .01$). To explore this three-way relationship further we conducted two multiple linear regressions separately for explicit self-esteem at Time 1 and at Time 2 (see Figures 8.7 and 8.8). A multiple regression with comparison tendency, condition, and an interaction of the two showed that none of these variables were significant predictors of women's explicit self-esteem at Time 1 ($-1.66 < \beta < .15, p > .10$). A multiple regression with the same three predictors as above showed that condition by comparison tendency interaction was a significant predictor of women's explicit self-esteem at Time 2 ($\beta = -.21, p < .05$). In addition, exposure condition by itself was a marginally significant predictor of women's explicit self-esteem at Time 2 ($\beta = -.14, p = .06$), indicating that women's explicit self-esteem was lower after viewing thin ads. As presented in Figure 8.8, in the female ads condition there was a weak negative correlation between women's comparison tendency and explicit self-esteem ($r = -.34, N = 89, p < .05$), whereas there was no significant correlation between comparison tendency and explicit self-esteem in the control condition (car ads; $r = -.10, N = 89, p > .10$). As presented in Figure 8.7, there was no significant correlation between women's comparison

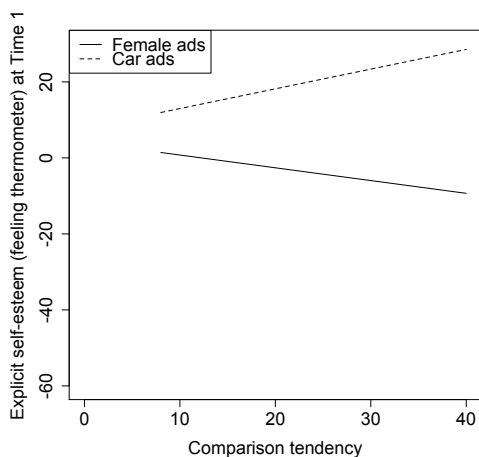


Figure 8.7: Exposure condition by comparison tendency interaction on women’s explicit self-esteem at Time 1 (multiple regression). *Note.* The values on the x -axis are limited to possible comparison tendency scores (8 – 40) based on the Comparison to Models Survey, see Appendix A.9.

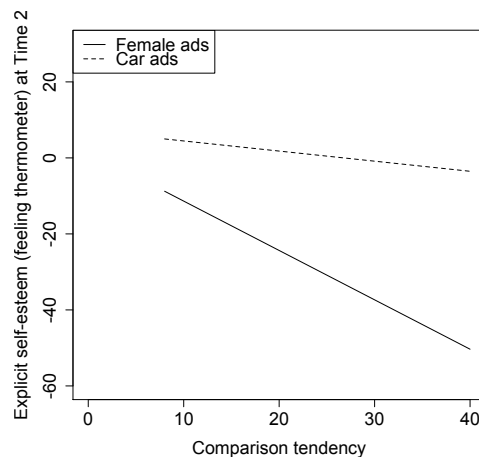


Figure 8.8: Exposure condition by comparison tendency interaction on women’s explicit self-esteem at Time 2 (multiple regression).

tendency and explicit self-esteem in any of the conditions. These findings suggest that after viewing female ads women with greater comparison tendency experienced lower explicit self-esteem. Thus, Hypothesis 5 stating that women with a stronger comparison tendency experience more negative effects of media exposure was partially confirmed.

Internalization of sociocultural ideals. For each dependent variable we conducted a two-way mixed ANOVA with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure condition and internalization). These analyses indicated no significant three-way interactions (time*condition*internalization) on women’s implicit and explicit self-esteem, body esteem, actual-ideal body discrepancy, and implicit body perception ($.01 \leq F \leq 1.45, p > .10$). Thus, Hypothesis 6 stating that women who have internalized the sociocultural ideals to a large extent will experience more negative

effects of advertising exposure was disconfirmed.

Media exposure. To test the moderation role of overall media exposure, we conducted six two-way mixed ANOVAs with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure condition and media exposure). These analyses indicated no significant three-way interactions (time*condition*media exposure) on women's implicit and explicit self-esteem, body esteem, actual-ideal body discrepancy, and implicit body perception ($.21 \leq F \leq 2.09, p > .10$). Hence, Hypothesis 7 stating that women more often exposed to idealized body portrayals will experience more effects of exposure was not confirmed.

Socioeconomic status. The objective (household income) and two subjective measures of women's SES (SES ladder and community ladder) were measured using an ordinal scale with 8 and 10 values respectively. In the case of the SES and the community ladders, we merged the first two values together because there were only 2 or fewer subjects who selected one of these first two values. Also, no women in our sample indicated their social standing to correspond to the highest rung (rung 10 was omitted), which resulted in each of these variables having in total 8 values. First, we explored the moderating role of women's objective SES (household income). As previously, for each dependent variable we conducted separate two-way mixed ANOVAs with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure condition and income level). These analyses indicated no significant three-way interactions (time*condition*income level) on women's implicit and explicit self-esteem (feeling thermometer and Likert-like scale), actual-ideal body discrepancy, and implicit body perception ($.61 \leq F \leq 1.21, p > .10$). We did find a significant three-way interaction (time*condition*income level) on women's explicit self-esteem measured using RSES ($F(14, 162) = 2.05, p < .05$) and on women's body esteem ($F(14, 162) = 2.04, p < .05$). Two univariate ANOVAs with exposure condition and household income as the independent factors did not reveal any significant predictors (two factors or the interaction between them) of

women's explicit self-esteem at Time 1 ($.04 \leq F \leq 1.76, p > .10$) and Time 2 ($1.19 \leq F \leq 1.28, p > .10$). Two further univariate ANOVAs with exposure

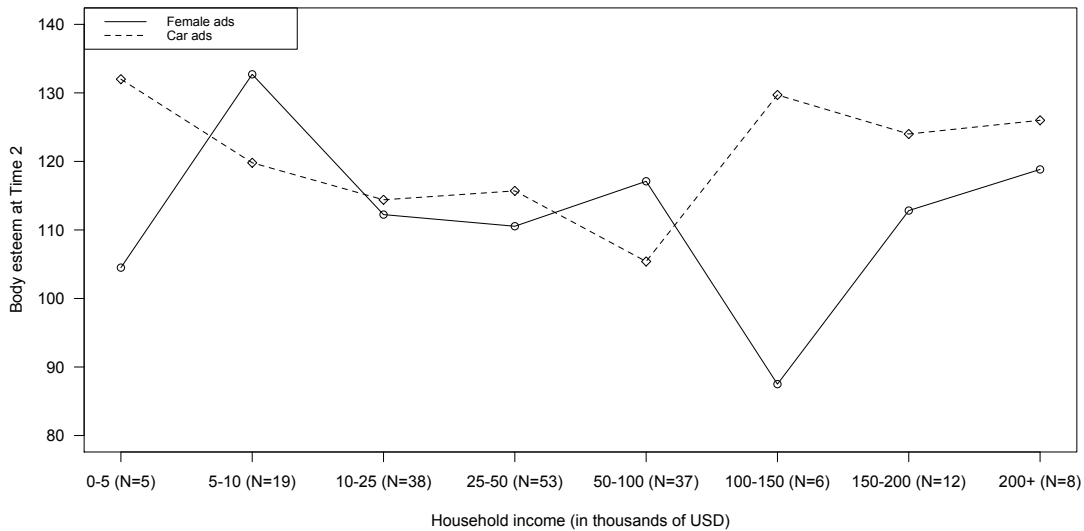


Figure 8.9: Exposure condition by household income interaction on women's body esteem at Time 2 (predicted means).

condition and household income as the independent factors did not reveal any significant predictors of women's body esteem at Time 1 ($.95 \leq F \leq 1.57, p > .10$) but there was a marginally significant condition by income interaction on women's body esteem at Time 2 ($F(7, 162) = 1.90, p = .07$). In addition, exposure condition was a marginally significant predictor of women's body esteem at Time 2 ($F(1, 162) = 3.55, p = .06$), suggesting that women reported lower body esteem after viewing thin ads ($M = 112.03, SE = 3.39$) than after viewing the control ads ($M = 120.89, SE = 3.25$). As presented in Figure 8.9, the interaction seems to be driven by two income groups with the fewest subjects ($\$0$ – $\$5,000$ ($N = 5$) and $\$100,000$ – $\$150,000$ ($N = 6$)). We ran another univariate ANOVA with the same predictors as above but having excluded the two income groups with the fewest subjects. This analysis confirmed that the exposure by income interaction is not a significant predictor of women's body esteem at Time 2 ($F(5, 155) = 1.28, p > .10$).

To test the moderating role of subjective SES, first for each dependent vari-

able we conducted separate two-way mixed ANOVAs with one repeated measures factor (i.e., measurement at Time 1 and Time 2) and two between-subjects factors (exposure condition and SES ladder). There were no significant three-way interactions (time*condition*SES ladder) on women's implicit and explicit self-esteem, body esteem, actual-ideal body discrepancy, and implicit body perception ($.33 \leq F \leq 1.37, p > .10$). A parallel analysis with exposure condition and community ladder as the two independent predictors also revealed no significant three-way interactions (time*condition*community ladder) on women's implicit and explicit self-esteem, body esteem, actual-ideal body discrepancy, and implicit body perception ($.51 \leq F \leq 1.95, p > .10$).

8.5 Discussion and conclusion

The current study did not reveal any main effects of advertising exposure on women's explicit or implicit self-esteem, body esteem, actual-ideal body discrepancy, or implicit body perception. Failure to find the main effects of exposure was partially expected based on our review of the literature identifying several demographic and personal moderators of women's exposure to idealized media portrayals (Chapter 2). Prior literature provided evidence for the assertion that not *all* women respond to media portrayals in a uniform way which called for investigating the role of moderating variables. In this study, we identified a few moderators of exposure to idealized body portrayals on women's self and body perception.

First, this study suggested that race/ethnicity might be an important moderator of some exposure effects. We found that exposure to idealized female portrayals had a different effect on women of different race/ethnicity. Viewing female ads had a negative effect on White women's implicit body perception (they had a heavier implicit body perception after exposure); whereas it had no significant effect on Asian or Hispanic women (there seemed to be a self-enhancing effect of exposure on Asian women who had a thinner implicit body perception after exposure, but it did not reach significance). These results are very interesting in the

light of previous work conducted predominantly in White women which showed mostly negative effects of exposure to idealized women's portrayals in White women (Grabe et al., 2008). This study also indicated that White women are negatively affected by exposure. It further suggests that White women might be particularly responsive to idealized portrayals of White models in advertising, whereas the response of Asian and Hispanic women is diametrically different. Non-White women were sheltered from the negative effects of exposure to White models (with Asian women potentially engaging in a fantasy) rather than engaged in upward social comparisons (White women). These findings partially replicated the results found in an ethnically diverse sample of men, in which a self-enhancing effect of idealized female portrayals on men's implicit self-esteem was observed in Asian and Hispanic, but not in White men (Chapter 4). The negative effect of exposure to these ads was discernible in White men, but it did not reach significance. Race/ethnicity was not a moderator of the remaining outcome variables in women, similarly to the results reported in Chapters 3 and 7.

Second, our results indicated that one personality trait, conscientiousness, played a moderating role of the effects of advertising exposure on women's explicit self-esteem (measured using the feeling thermometer). The data showed that after viewing idealized female portrayals only the more conscientious women experienced a self-enhancing effect of exposure and reported a more positive explicit self-esteem. A possible explanation for this finding could be that more conscientious women had a high motivation to assimilate themselves to the group of ideal models and engaged in a fantasy. This finding, however, should be treated with caution because it was found for only one measure of women's explicit self-esteem (feeling thermometer of self-esteem) and did not extend to the remaining two (RSES and Likert-like scale). Conscientiousness was not a significant moderator of exposure effects on implicit self-esteem, body esteem, or implicit body perception. Similarly to the results of the previous study (Chapter 7), extraversion and emotional stability did not moderate the effects of exposure on implicit and explicit self-esteem, body esteem and implicit body perception.

Third, women's tendency to compare themselves to media models was found

to be a significant moderator of advertising exposure effects on women's explicit self-esteem (feeling thermometer). Our data illustrated that after viewing idealized female portrayals women with greater comparison tendency experienced lower explicit self-esteem. This makes sense in the light of Social Comparison Theory (Festinger, 1954) arguing that upward social comparisons lead to negative effects. Women who tend to more often engage in social comparison with media models (upward comparisons) experience as a result more negative effects of exposure to idealized models in advertising. This finding did not extend to the other two measures of explicit self-esteem (RSES and Likert-like scale). Comparison tendency was not a significant moderator of exposure effects on women's implicit self-esteem, body esteem, and implicit body perception (Chapter 7).

Finally, it was surprising that women's body weight (BMI) was not a significant moderator of any exposure effects, even though it did play a moderating role of exposure to idealized female portrayals on women's implicit body perception as reported in Chapter 7. Moreover, two moderators which have not been tested in prior research, media exposure and socioeconomic status (objective and subjective), did not play a moderating role of advertising exposure on any of the outcome measures.

Overall, even though we found a few exciting effects of exposure (and identified a few moderators) they were very scarce. In the majority of cases in this study, we did not find any significant effects of exposure or significant moderators. Most of the significant effects were found on explicit self-esteem measured using the feeling thermometer and one effect on implicit body perception. In this study, we included two implicit measures of self-esteem and body perception which corresponded to the two explicit measures - explicit self-esteem and actual-ideal body discrepancy. We hoped to reveal that the implicit measures would reveal stronger effects of advertising, however, in most cases we did not find any effects using either type of method. Therefore, based on the current study we cannot conclude that implicit methods of self- and body perception offered any advantage to the study of exposure effects over their explicit counterparts.

Nevertheless, presence of a few moderation effects supports this study's

approach to include several variables that might interact with women's responses to idealized portrayals of women in advertising. We have shown here that not only demographic (e.g., race/ethnicity) but also personal moderators like comparison tendency and conscientiousness play an important role in determining the nature of exposure effects.

One of the limitations of the current study was the inability to create an index of explicit self-esteem based on the three measures used (RSES, feeling thermometer, Likert-like scale). Based on prior work we assumed that these three measures would form a reliable index (Greenwald et al., 2002). Without this composite index our results reported for explicit self-esteem measures only using the feeling thermometer are difficult to interpret. Some effects (e.g., the moderating role of comparison tendency and conscientiousness) were present only when we used the feeling thermometer of explicit self-esteem but were absent for the other two measures.

In future work we plan to replicate this study in an ethnically diverse sample of men as well as include further potential moderators of exposure. Moreover, we plan to develop more complex models of exposure incorporating moderators but also mediators.

Table 8.4: Zero-order correlations between all study variables.

	IAT-SE	RSES	Therm.	Likert	BES	PBIS	IAT-BP	Extr.	Consc.	Stab.	CTM	Int.	Media	BMI	Income	Ladder1	Ladder2		
IAT-SE	-																		
RSES		-																	
Therm.			-	.24	.56	.54	.28	.35	.30	.43	-.16*	-.26							
Likert				-	.19	.19*		.39	.29	.41	-.16*	-.22				.19			
BES					-	.50		.31	.27	.31	-.18*	-.25		-.26					
PBIS						-.30						.33		.60					
IAT-BP						-													
Extr.								-											
Consc.										.19*		-.16*							
Stab.											-.24	-.23							
CTM												.60	.25						
Int.																			
Media																			
BMI																			
Income																			
Ladder1																	.19		
Ladder2																			.19*

Note. All dependent variables entered were measured at Time 1. Most variables are measured at least using an interval scale, except for a few ordinal scale variables marked in *italics*.
 BES - Overall body esteem (BES; Franzoi and Shields, 1984); Consc. - Conscientiousness (TIPI; Gosling, et al., 2003); CTM - Comparison to Models (Strowman, 1996); Extr. - Extraversion (TIPI; Gosling, et al., 2003); IAT-BP - Implicit Association Test (IAT) of body perception; IAT-SE - Implicit Association Test (IAT) of self-esteem (Greenwald et al., 1998); Int. - Internalization subscale of the SATAQ (Cusumano and Thomspon, 1997); Ladder1 - SES ladder (Goodman et al., 2001); Ladder2 - Community ladder (Goodman et al., 2001); Likert - Likert-like scale of self-esteem (Greenwald et al., 1998); Media - Average daily media exposure (in hours); PBIS - Pictorial Body Image Scale (Stunkard et al., 1983); RSES - Rosenberg Self-Esteem Scale (Rosenberg, 1965); Stab. - Emotional Stability (TIPI; Gosling, et al., 2003); Therm. - Feeling thermometer of self-esteem.
 Basis: $167 \leq n \leq 178$ women (pairwise deletion).
 All correlations are significant at $p < .01$ ($*p < .05$; Pearson, *Spearman*).

Part VI

Conclusions

Chapter 9

General conclusion

*I left the ending ambiguous,
because that is the way life is.*

–Bernardo Bertolucci

Prior research suggested that advertisements portraying men's and women's bodies in an idealized way is harmful to those viewing them. Studies showed that viewing such ads not only negatively influences men's and women's self-esteem, body dissatisfaction, depression, but it is also believed to contribute to developing eating disorders negatively affecting individuals' health. Based on this dissertation, however, we would like to argue that this is not such a simple story. This research showed instances in which exposure to idealized body portrayals had self-enhancing effects for some individuals but negative (or none) for others. We proposed three research questions which involved the investigation of two demographic (gender, race/ethnicity) and one personal moderator (personality) of the effects of media exposure on self and body image. In addition, we explored the potential advantage of studying exposure effects using novel implicit methodology.

First, we investigated whether the effects of media exposure to idealized bodies differ depending on participants' gender (RQ 1). Due to the fact that women exhibit generally more body dissatisfaction than men (van Hoeken et al., 1998), we hypothesized to find slightly more negative effects of exposure in women than in men (Hypothesis 1). This hypothesis received little support due to the

fact that in many instances we did not find any exposure effects in both men and women, and in the study reported in Chapter 7 we found that men and women reacted to exposure in similar ways. Viewing thin and attractive women led to a thinner implicit body perception in obese men and women, whereas exposure resulted in a heavier implicit body perception in underweight individuals. Partial support for Hypothesis 1 can be derived from studies reported in Chapters 3 and 4, where we found that advertisements portraying thin and attractive women had self-enhancing effects on implicit self-esteem of men (Asian and Hispanic), but no effect on women. We did not investigate gender differences in the last experimental study (Chapter 8). As mentioned in the Introduction in Part I, men received less attention in literature on advertising exposure effects than women and studies comparing gender differences were very scarce. However, a few experimental studies that have directly compared men's and women's susceptibility to advertising images also reported that the effects of exposure were similar in men and women (Barlett and Harris, 2008; Grogan et al., 1996).

The second research question asked whether the effects of exposure to idealized bodies differ depending on individual's race/ethnicity. In the Introduction in Part I we developed several predictions, but in general we hypothesized that the effects of exposure would differ across race/ethnicity (Hypothesis 2). Studies reported in this dissertation provided partial support for this hypothesis. We found that implicit self-esteem of Asian and Hispanic men increased after viewing idealized portrayals of women, but exposure had no effect on White men's implicit self-esteem (Chapter 4). This effect of exposure was absent in women (Chapter 3). In the final study, advertisements portraying thin and attractive women had a negative effect on White women, and had no impact on Asian and Hispanic women's implicit body perception (Chapter 8), even though from the interaction it seemed that there was a self-enhancing effect on Asian women, but it did not reach significance. In this dissertation we also reported several instances of the lack of exposure effects which appeared for all men or women regardless of their race/ethnicity.

Next, we explored the possibility that men and women might respond differ-

ently to advertising exposure depending on their personality traits (RQ 4). In particular, we expected at least two personality traits, extraversion and neuroticism, to distinguish between participants who are more (individuals high on neuroticism and low on extraversion) or less vulnerable (individuals high on extraversion and low on neuroticism) to the negative effects of exposure to idealized body portrayals (Hypothesis 4). Additional support for this hypothesis was derived from the study reported in Chapter 6 which confirmed that extraversion, neuroticism, and conscientiousness are related to body dissatisfaction. These relationships, however, were mediated by self-esteem in both men and women. Against our prediction and recent work (Dalley et al., 2009; Roberts and Good, 2010) we did not find substantial support for our hypothesis. Effects of exposure to idealized body portrayals did not differ depending on men's or women's level of extraversion or neuroticism (Chapters 7, 8). However, the final study showed one supporting finding (Chapter 8). After viewing idealized female portrayals more conscientious women experienced a more positive explicit self-esteem.

The third research question had little to do with the individual level differences. Instead, we were interested in the advantage of using novel implicit methodology (Implicit Association Test, IAT; Greenwald, McGhee, & Schwartz, 1998), which allowed us to measure automatic processing of advertising. We hypothesized that implicit measures would reveal stronger effects of media exposure than their explicit counterparts (Hypothesis 3). We found support for this hypothesis only in one study (Chapter 4). Whereas we found a self-enhancing effect of exposure to idealized female portrayals on implicit self-esteem of men (Asian and Hispanic), explicit measures failed to reveal the same pattern of results. The difference in the effects on implicit versus explicit self-esteem suggested that implicit measures might be more sensitive to short term, subtle effects on self-esteem than explicit measures. This difference was not replicated in a similar study in women (Chapter 3) in which we did not find any effects of exposure. In addition, the study in Chapter 8 showed that effects of exposure on women's implicit body perception were moderated by race/ethnicity. No moderation was found for women's explicit body perception (i.e., actual-ideal body discrepancy), which also

suggested that the implicit measure might have been more sensitive to exposure effects. Implicit measures of self-esteem in the study reported in Chapter 8 did not reveal the same pattern of results. In Chapter 7, we did not have an explicit measure corresponding directly to an implicit measure of body perception. Further research is needed to confirm the potential advantage of using implicit methods in the study of advertising exposure effects.

9.1 Limitations and future directions

We discussed above the challenges associated with using in our research realistic advertisements (Chapters 3 and 4), that is, actual advertisements of actual products aired on television (see Appendices B.1 and B.2). The aim of this approach was to expose women to visuals as close as possible to women's media experiences outside of the lab. One problem with this approach is that our sample of advertisements most likely confounds the concepts of thinness and muscularity with physical attractiveness of advertising models. This has been a limitation of many previous studies (Halliwell and Dittmar, 2004; Halliwell et al., 2005). It is not absolutely clear whether the effects of exposure are brought about by advertising models having a thin/muscular body, having a thin/muscular body and being physically attractive, or by being only attractive. A few studies exposed women to images of fashion models and as a control used images of more realistic or average-looking women (Dittmar and Howard, 2004; Halliwell and Dittmar, 2004; Halliwell et al., 2005; Martin and Kennedy, 1993) or overweight women (Crouch and Degelman, 1998; Smeesters and Mandel, 2006) and found that only the effects of exposure to fashion models were negative. Others manipulated attractiveness as well as weight basing their sample on pilot ratings of both attractiveness and thinness (Irving, 1990). But the body size and attractiveness dilemma still remains unresolved in those studies, as different women are shown in different conditions. Therefore, the best way around this is the investigation of exposure effects using artificially created control advertisements, for instance, using the same advertisement stretched to be in a few different body sizes (either achieved with the help

of computer software or using different screen sizes). A few studies employed this strategy (Anschutz et al., 2008a; Clay et al., 2005; Monro and Huon, 2006) but have not reached concrete conclusions regarding the impact of weight versus attractiveness. Therefore, further investigations of the relationship between these two aspects of advertising models' portrayals are needed in both men and women.

Based on evolutionary theory, we could assume that ideal men's attributes differ from women's. Whereas we are socialized to idealize women's thinness and physical attractiveness (or 'reproductive capacity'; Buss, 1989), assuming that it is parallel in men might be limited. In men, apart from muscularity and physical attractiveness, status or power (or 'resource acquisition') might be an equally or even a more important factor contributing to men's desirability, especially as potential mates for women (Buss, 1989; Buss, 1991). If this is true, then it is much harder to conceptualize a man's ideal as compared to a woman's ideal, because physical attributes solely are easier to notice, code, and control for. However, on the other hand, it could be that this third factor, power, might be increasingly important in the perception of women. In several Western countries with the highest index of Gender Equality (e.g., United States, Australia, or Norway; Gender Inequality Index by the Human Development Report, 2010) power might be an increasingly desirable attribute of women. A carefully designed research study using computer-modified advertisements which would present physically attractive (and thin/muscular) models with or without a high social status could cast some new light on the perception of men's and women's ideals.

Another limitation of this work is failure to ask participants to report their sexual orientation. Men's and women's sexual orientation could be a crucial factor determining the extent to which body image is important for their self-esteem. This is especially true for homosexual men, who are on average more concerned with body image issues than heterosexual men (Striegel-Moore and Bulik, 2007). As a result, they might process idealized advertising differently and engage in more social comparisons with male media models. The effects of advertising could be also more negative for these men. Moreover, homosexual women could respond differently to idealized portrayals of women than heterosexual women and possibly

engage in a process similar to the one of heterosexual men viewing female ads, that is, imagine themselves with an ideal partner (see Chapter 4). The study of personal differences in exposure effects among a group of homosexual and heterosexual (or metrosexual) men and women poses several new and interesting research questions. However, we would argue that not having controlled for sexual orientation in our studies had only a negligible effect due to the fact that the percentage of homosexual or metrosexual individuals in our sample was most likely small.

In all studies reported above we have used TV ads presenting White models only and we have investigated the effects of exposure to these models in an ethnically diverse sample of men and women. As reported above, we have found some differences in these effects depending on participant's race/ethnicity (Chapters 4, 8). This is already a big contribution to prior work which studied media effects in predominantly White samples. However, our design is also limited. To be able to tell a complete story we would need to expose participants also to advertisements portraying only Asian, or only Hispanic, or only African American models. This design would allow us to really capture the moderating role of race/ethnicity in the reception of idealized body portrayals of men and women. It would be also useful to measure the strength of women's racial/ethnic identity. We are not aware of any study that has employed such a diverse design (both at the subject and stimulus level).

9.2 Final remarks

All in all, in this work we have provided evidence suggesting that exposure to advertising is a very complex process. We have cast some light on which factors are influencing the nature of exposure effects but it is definitely worth exploring further what other variables play a role in distinguishing between individuals who are negatively affected by advertising and those who are not. This knowledge can help us better understand the effects of advertising and design interventions for specific populations. Some good news are that not all advertising effects are harmful and hopefully future work will identify further 'fantasy effects'. Researchers

should also develop new specific theories helping us better understand the complex nature of the effects of advertising portrayals on self and body image. The ‘fantasy effects’ mentioned in this dissertation are particularly exciting and not always easy to explain. The questions asked in this dissertation remain still open and I hope this work will inspire further research on moderators of advertising exposure effects and further investigation of the utility of moving beyond self-report measures.

Bibliography

- (1987). Diagnostic and statistical manual of mental disorders (DSM-III-R). Technical report, American Psychiatric Association, Washington, DC.
- (2006). Statistics. Technical report, Eating Disorders Coalition.
- Adams, G., Turner, H., and Bucks, R. (2005). The experience of body dissatisfaction in men. *Body Image*, 2:271–283.
- Adler, N. E., Boyce, T., Chesney, M. A., Cohen, S., Folkman, S., Kahn, R. L., and Syme, S. L. (1994). Socioeconomic status and health: The challenge of the gradient. *American Psychologist*, 49:15–24.
- Adler, N. E., Epel, E. S., Castellazzo, G., and Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. *Health Psychology*, 19:586–592.
- Agliata, D. and Tantleff-Dunn, S. (2004). The impact of media on males' body image. *Journal of Social and Clinical Psychology*, 23:7–22.
- Anschutz, D. J., Engels, R. C. M. E., Becker, E. S., and van Strien, T. (2008a). The bold and the beautiful: Influence of body size of televised media models on body dissatisfaction and actual food intake. *Appetite*, 51:530–537.
- Anschutz, D. J., Engels, R. C. M. E., Becker, E. S., and van Strien, T. (2009). The effects of TV commercials using less thin models on young women's mood, body image and actual food intake. *Body Image*, 6:270–276.
- Anschutz, D. J., van Strien, T., and Engels, R. C. M. E. (2008b). Exposure to slim images in mass media: Television commercials as reminders of restriction in restrained eaters. *Health Psychology*, 27:401–408.
- Antonovsky, A. (1967). Social class, life expectancy and overall mortality. *Milbank*

- Memorial Fund Quarterly*, XLV:31–73.
- Atkinson, C. and Polivy, J. (1976). Effects of delay and attack and retaliation on state depression and hostility. *Journal of Abnormal Psychology*, 85:570–576.
- Austin, E. W., Chen, M.-J., and Grube, J. W. (2006). How does alcohol advertising influence underage drinking? The role of desirability, identification and skepticism. *Journal of Adolescent Health*, 38:376–384.
- Baird, A. L. and Grieve, F. G. (2006). Exposure to male models in advertisements leads to a decrease in men’s body satisfaction. *North American Journal of Psychology*, 8:115–122.
- Banaji, M. (2001). Implicit attitudes can be measured. In Roediger, H. L., Nairne, J. S., Neath, I., and Surprenant, A., editors, *The nature of remembering: Essays in honor of Robert G. Crowder*, pages 117–149. American Psychological Association, Washington, DC.
- Banasiak, S. J., Wertheim, E. H., Koerner, J., and Voudouris, N. J. (2001). Test-retest reliability and internal consistency of a variety of measures of dietary restraint and body concerns in a sample of adolescent girls. *International Journal of Eating Disorders*, 29:85–89.
- Bandura, A. (1994). Social cognitive theory of mass communication. In Bryant, J. and Zillmann, D., editors, *Media effects: Advances in theory and research*, pages 61–90. Erlbaum, Hillsdale, NJ, 1st edition.
- Bandura, A. (2002). Social cognitive theory of mass communication. In Bryant, J. and Zillmann, D., editors, *Media effects: Advances in theory and research*, pages 121–153. Erlbaum, Mahwah, NJ, 2nd edition.
- Barlett, C. P. and Harris, R. J. (2008). The impact of body emphasizing video games on body image concerns in men and women. *Sex Roles*, 59:586–601.
- Barlett, C. P., Harris, R. J., Smith, S., and Bonds-Raacke, J. (2005). Action figures and men. *Sex Roles*, 53:877–885.
- Barlett, C. P., Vowels, C. L., and Saucier, D. A. (2008). Meta-analysis of the effects of media images on men’s body-image concerns. *Journal of Social and Clinical Psychology*, 27:279–310.
- Barr, S. I. (1995). Dieting attitudes and behavior in urban high school students:

- Implications for calcium intake. *Journal of Adolescent Health*, 16:458–464.
- Becker, A. E., Burwell, R. A., Gilman, S. R., Herzog, D. B., and Hamburg, P. (2002). Eating behaviours and attitudes following prolonged exposure to television viewing among ethnic Fijian adolescent girls. *British Journal of Psychiatry*, 180:509–514.
- Berscheid, E., Walster, E., and Bohrnstedt, G. (1973). Body image: The happy American body. *Psychology Today*, 7:119–131.
- Bessenoff, G. R. (2006). Can the media affect us? Social comparison, self-discrepancy, and the thin ideals. *Psychology of Women Quarterly*, 30:239–251.
- Bissell, K. and Zhou, P. (2004). Must-see TV or ESPN: Entertainment and sports media exposure and body-image distortion in college women. *Journal of Communication*, 54:5–21.
- Blond, A. (2008). Impacts of exposure to images of ideal bodies on male body dissatisfaction: A review. *Body Image*, 5:244–250.
- Borzekowski, D. L. G., Robinson, T. N., and Killen, J. D. (2000). Does camera add 10 pounds? Media use, perceived importance of appearance, and weight concerns among teenage girls. *Journal of Adolescent Health*, 26:36–41.
- Bosson, J. K., Swann, W. B., and Pennebaker, J. (2000). Stalking the perfect measure of implicit self-esteem: The blind men and the elephant revisited? *Journal of Personality and Social Psychology*, 79:631–643.
- Botta, R. A. (2000). The mirror of television: A comparison of Black and White adolescents' body image. *Journal of Communication*, 50:144–159.
- Botta, R. A. (2003). For your health? The relationship between magazine readings and adolescents' body image and eating disorders. *Sex Roles*, 48(9/10):389–399.
- Bowman, R. L. and DeLucia, J. L. (1992). Accuracy of self-reported weight: A meta-analysis. *Behavior Therapy*, 23:637–655.
- Brand, P. A., Rothblum, E. D., and Solomon, L. J. (1992). A comparison of lesbians, gay men, and heterosexuals on weight and restrained eating. *International Journal of Eating Disorders*, 11:253–259.
- Brannan, M. E. and Petrie, T. E. (2008). Moderators of the body dissatisfaction-eating disorder symptomatology relationship: Replication and extension. *Jour-*

- nal of Counseling Psychology*, 55:263–275.
- Brown, A. and Dittmar, H. (2005). Think ‘thin’ and feel bad: The role of appearance schema activation, attention level, and thin-ideal internalization for young women’s responses to ultra-thin media ideals. *Journal of Social and Clinical Psychology*, 24:1088–1113.
- Bruch, H. (1962). Perceptual and conceptual disturbances in anorexia nervosa. *Psychosomatic Medicine*, 24(2):187–194.
- Buhlmann, U., Teachman, B. A., Gerbershagen, A., Kikul, J., and Rief, W. (2008). Implicit and explicit self-esteem and attractiveness beliefs among individuals with body dysmorphic disorder. *Cognitive Therapy and Research*, 32(3):213–225.
- Buhlmann, U., Teachman, B. A., Naumann, E., Fehliner, T., and Rief, W. (2009). The meaning of beauty: Implicit and explicit self-esteem and attractiveness beliefs in body dysmorphic disorder. *Journal of Anxiety Disorders*, 23(5):694–702.
- Burt, M. (1980). Cultural myths and supports for rape. *Journal of Personality and Social Psychology*, 38:217–230.
- Buss, A. H. (1980). *Self-consciousness and social anxiety*. W. H. Freeman, New York.
- Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, 12:1–49.
- Buss, D. M. (1991). Evolutionary personality psychology. *Annual Review of Psychology*, 42:459–491.
- Campbell, W. K., Bosson, J. K., Goheen, T. W., Lakey, C. E., and Kernis, M. H. (2007). Do narcissists dislike themselves ‘deep down inside’? *Psychological Science*, 18:227–229.
- Cash, T. F. (1990a). The Multidimensional Body-Self Relations Questionnaire. An unpublished manual.
- Cash, T. F. (2002). Cognitive behavioral perspectives on body image. In Cash, T. F. and Pruzinsky, T., editors, *Body image: A handbook of theory, research, and clinical practice*. Guilford Press, New York.

- Cash, T. F. and Labarge, A. S. (1996). Development of the Appearance Schemas Inventory: A new cognitive body-image assessment. *Cognitive Therapy and Research*, 20:37–50.
- Cash, T. F., Phillips, K. A., Santos, M. T., and Hrabosky, J. I. (2004). Measuring ‘negative body image’: Validation of the body image disturbance questionnaire in a non-clinical population. *Body Image*, 1:363–372.
- Cash, T. F. and Szymanski, M. L. (1995). The development and validation of the Body Image Ideals Questionnaire. *Journal of Personality Assessment*, 64:466–477.
- Cash, T. F. C. (1990b). The psychology of physical appearance: Aesthetics, attributes, and images. In Cash, T. F. and Pruzinsky, T., editors, *Body images: Development, deviance and change*. Guilford Press, New York.
- Cassin, S. E. and von Ranson, K. M. (2005). Personality and eating disorders: A decade in review. *Clinical Psychology Review*, 25:895–916.
- Cattarin, J. A., Thompson, J. K., Thomas, C., and Williams, R. (2000). Body image, mood, and televised images of attractiveness: The role of social comparison. *Journal of Social and Clinical Psychology*, 17:220–239.
- Center for Disease Control and Prevention (2010). About BMI for adults.
- Champion, H. and Furnham, A. (1999). The effect of the media on body satisfaction in adolescent girls. *European Eating Disorders Review*, 7:213–228.
- Cialdini, R. B., Borden, R. J., Thorne, A., Walker, M. R., Freeman, S., and Sloan, L. R. (1976). Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology*, 34:366–375.
- Clay, D., Vignoles, V. L., and Dittmar, H. (2005). Body image and self-esteem among adolescent girls: Testing the influence of sociocultural factors. *Journal of Research on Adolescence*, 15:451–477.
- Cohn, L. D. and Adler, N. E. (1992). Female and male perceptions of ideal body shapes. *Psychology of Women Quarterly*, 16:69–79.
- Collins, R. L. (1996). For better or worse: The impact of upward social comparison on self-evaluation. *Psychological Bulletin*, 119:51–69.
- Coolican, C. R. (1999). *The effect of television programming that emphasizes*

- beauty/thinness on women's body image and self-esteem*. PhD thesis, University of Alberta, Edmonton, Alberta, Canada.
- Cooper, P. J., Taylor, M. J., Cooper, Z., and Fairburn, C. G. (1987). The development and validation of the Body Shape Questionnaire. *International Journal of Eating Disorders*, 6:485–494.
- Crouch, A. and Degelman, D. (1998). Influence of female body images in printed advertising on self-ratings of physical attractiveness by adolescent girls. *Perceptual and Motor Skills*, 87:585–586.
- Cusumano, D. and Thompson, J. (1997). Body image and body shape ideals in magazines: Exposure, awareness, and internalization. *Sex Roles*, 37:701–721.
- Cvencek, D., Greenwald, A. G., and Meltzoff, A. N. (in press). Balanced identity theory: Evidence for implicit consistency in social cognition. In Gawronski, B. and Strack, F., editors, *Cognitive consistency: A unifying concept in social psychology*. Guilford Press, New York.
- Dalley, S. E., Buunk, A. O., and Umit, T. (2009). Female body dissatisfaction after exposure to overweight and thin media images: The role of body mass index and neuroticism. *Personality and Individual Differences*, 47:47–51.
- Davis, C. (1990a). Body image and weight preoccupation: A comparison between exercising and non-exercising women. *Appetite*, 15:13–22.
- Davis, C. (1990b). Weight and diet preoccupation and addictiveness: The role of exercise. *Personality and Individual Differences*, 11:823–827.
- Davis, C. and Cowles, M. P. (1989). A comparison of weight and diet concerns and personality factors among female athletes and non-athletes. *Journal of Psychosomatic Research*, 33:527–536.
- Davis, C., Elliott, E., Dionne, M., and Mitchell, I. (1991). The relationship of personality factors and physical activity to body satisfaction in men. *Personality and Individual Differences*, 12:689–694.
- Davis, J., Busch, J., Hammatt, Z., Novotny, R., Harrigan, R., Grandinetti, A., and Easa, D. (2004). The relationship between ethnicity and obesity in Asian and Pacific Islander populations: A literature review. *Ethnicity Disease*, 14:111–118.
- Dens, N., DePelsmacker, P., and Janssens, W. (2009). Effects of scarcely dressed

- models in advertising on body esteem for Belgian men and women. *Sex Roles*, 60:366–378.
- Desrochers, D. M. and Holt, D. J. (2007). Children's exposure to television advertising: Implications for childhood obesity. *Journal of Public Policy and Marketing*, 26:182–201.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, 56(1):5–18.
- Dietz, T. L. (1998). An examination of violence and gender role portrayals in video games: Implications for gender socialization and aggressive behavior. *Sex Roles*, 38:425–442.
- Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, 41:417–440.
- Dionne, M. D. and Davis, C. (2004). Body image variability: The influence of body-composition information and neuroticism on young women's body dissatisfaction. *Body Image*, 1:335–349.
- Dittmar, H. and Blayney, M. (1996). Women's self-reported eating behaviours and their responses to food and non-food television advertisements. *European Eating Disorders Review*, 4:217–231.
- Dittmar, H., Halliwell, E., and Stirling, E. (2009). Understanding the impact of thin media models on women's body-focused affect: The roles of thin-ideal internalization and weight-related self-discrepancy activation in experimental exposure effects. *Journal of Social and Clinical Psychology*, 28:43–72.
- Dittmar, H. and Howard, S. (2004). Thin-ideal internalization and social comparison tendency as moderators of media models' impact on women's body-focused anxiety. *Journal of Social and Clinical Psychology*, 23:768–791.
- Dovidio, J. F., Kawakami, K., and Geartner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, 82:62–68.
- Duggan, S. J. and McCreary, D. R. (2004). Body image, eating disorders, and the drive for muscularity in gay and heterosexual men: The influence of media images. *Journal of Homosexuality*, 47:45–58.

- Durkin, S. J. and Paxton, P. J. (2002). Predictors of vulnerability to reduced body image satisfaction and psychological well-being in response to idealized female media images in adolescent girls. *Journal of Psychosomatic Research*, 53:995–1005.
- Dutton, D. B. and Levine, S. (1989). Overview, methodological critique, and reformulation. In Bunker, J. P., Gomby, D. S., and Kehrer, B. H., editors, *Pathways to health*, pages 29–69. The Henry J. Kaiser Family Foundation, Menlo Park, CA.
- Eccles, J. S., Wigfield, A., Flanagan, C. A., Miller, C., Reuman, D. A., and Yee, D. (1989). Self-concepts, domain values, and self-esteem: Relations and changes at early adolescence. *Journal of Personality*, 52:283–310.
- Evans, P. C. and McConnell, A. R. (2003). Do racial minorities respond in the same way to mainstream beauty standards? *Self & Identity*, 2:153–167.
- Eysenck, H. J. (1990). Biological dimensions of personality. In Pervin, L. A., editor, *Handbook of personality: Theory and research*, pages 244–276. Guilford Press, New York.
- Fallon, A. and Rozin, P. (1985). Sex differences in perceptions of desirable body shape. *Journal of Abnormal Psychology*, 94:102–105.
- Farnham, S. D., Greenwald, A. G., and Banaji, M. R. (1999). Implicit self-esteem. In Abrams, D. and Hogg, M. A., editors, *Social identity and social cognition*. Blackwell Publishers, Oxford, England.
- Farquhar, J. C. and Wasylkiw, L. (2007). Media images of men: Trends and consequences of body conceptualization. *Psychology of Men & Masculinity*, 8:145–160.
- Fenigstein, A., Scheier, M. F., and Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, 43:522–527.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7:117–140.
- Fine, S., Haley, G., Gilbert, M., and Forth, A. (1993). Self-image as a predictor of outcome in adolescent major depressive disorder. *Journal of Child Psychology*

- and *Psychiatry*, 34:1399–1407.
- Flegal, K. M., Carroll, M. D., Kuczmarski, R. J., and Johnson, C. L. (1998). Overweight and obesity in the United States: Prevalence and trends, 1960-1994. *International Journal of Obesity And Related Metabolism Disorders*, 22:39–47.
- Franzoi, S. L. (1994). Further evidence of the reliability and validity of the body esteem scale. *Journal of Clinical Psychology*, 50:237–239.
- Franzoi, S. L. and Shields, S. A. (1984). The Body Esteem Scale: Multidimensional structure and sex differences in a college population. *Journal of Personality Assessment*, 48:173–178.
- Fredrickson, B. L. and Roberts, T. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, 21:173–206.
- Fredrickson, B. L., Roberts, T., Noll, S. M., Quinn, D. M., and Twenge, J. M. (1998). That swimsuit becomes you: Sex differences in self-objectification, restrained eating, and math performance. *Journal of Personality and Social Psychology*, 75:269–284.
- Frisby, C. M. (2004). Does race matter? Effects of idealized images on African American women's perceptions of body esteem. *Journal of Black Studies*, 34:323–347.
- Garner, D. M. (1991). *Eating Disorder Inventory - 2*. Psychological Assessment Resources, Inc, Odessa, FL.
- Garner, D. M., Olmstead, M. P., and Polivy, J. (1983). Development and validation of a multidimensional Eating Disorder Inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2:15–34.
- Garner, D. M., Olmsted, M., Bohr, Y., and Garfinkel, P. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, 12:871–878.
- Gerbner, G. (1969). Toward 'cultural indicators': The analysis of mass mediated message systems. *AV Communication Review*, 17:137–148.
- Gil-Kashiwabara, E. F. (2002). Body image disturbance and disordered eating in African-American and Latina women. In Collins, L. H. and Dunlap, M. R., edi-

- tors, *Charting a new course for feminist psychology*, pages 282–306. Greenwood Press, Westport, CT.
- Goldman, N., Cornman, J. C., and Chang, M. C. (2006). Measuring subjective social status: A case study of older Taiwanese. *Journal of Cross-Cultural Gerontology*, 21:71–89.
- Goodman, E., Adler, N. E., Kawachi, I., Frazier, L. A., Huang, B., and Colditz, G. A. (2001). Adolescents' perceptions of social status: Development and evaluation of a new indicator. *Pediatrics*, 108:1–8.
- Gosling, S. D., Rentfrow, P. J., and Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, 37:504–528.
- Grabe, S. and Hyde, J. S. (2006). Ethnicity and body dissatisfaction among women in the United States: A meta-analysis. *Psychological Bulletin*, 132:622–640.
- Grabe, S., Ward, L. M., and Hyde, J. S. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134:460–476.
- Green, S. P. and Pritchard, M. E. (2003). Predictors of body image dissatisfaction in adult men and women. *Social Behavior and Personality*, 31:215–222.
- Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal history. *American Psychologist*, 35:603–618.
- Greenwald, A. G. and Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102:4–27.
- Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., and Mellott, D. S. (2002). Unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, 109:3–25.
- Greenwald, A. G., McGhee, D. E., and Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74:1464–1480.
- Greenwald, A. G. and Nosek, B. (2001). Health of the Implicit Association Test at age 3. *Zeitschrift fuer Experimentelle Psychologie*, 48:85–93.
- Greenwald, A. G., Nosek, B. A., and Banaji, M. R. (2003). Understanding and

- using the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85:197–216.
- Greenwald, A. G., Nosek, B. A., Banaji, M. R., and Klauer, K. C. (2005). Validity of the salience asymmetry interpretation of the Implicit Association Test: Comment on Rothermund and Wentura (2004). *Journal of Experimental Psychology: General*, 134:420–425.
- Greenwald, A. G., Nosek, B. A., and Sriram, N. (2006). Consequential validity of the Implicit Association Test. *American Psychologist*, 61:56–61.
- Greenwald, A. G., Poehlman, T. A., Uhlmann, E., and Banaji, M. R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, 97:17–41.
- Groesz, L. M., Levine, M. P., and Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, 31:1–16.
- Grogan, S. (2008). *Body Image: Understanding body dissatisfaction in men, women, and children*. Taylor and Francis, London.
- Grogan, S. (2010). Promoting positive body image in males and females: Contemporary issues and future directions. *Sex Roles*, 63:757–765.
- Grogan, S., Williams, Z., and Conner, M. (1996). The effects of viewing same-gender photographic models on body-esteem. *Psychology of Women Quarterly*, 20:569–575.
- Halliwel, E. and Dittmar, H. (2004). Does size matter? The impact of model's body size on women's body-focused anxiety and advertising effectiveness. *Journal of Social and Clinical Psychology*, 23:104–122.
- Halliwel, E., Dittmar, H., and Howe, J. (2005). The impact of advertisements featuring ultra-thin or average-size models on women with a history of eating disorders. *Journal of Community & Applied Social Psychology*, 15:406–413.
- Halliwel, E., Dittmar, H., and Orsborn, A. (2007). The effect of exposure to muscular male models among men: Exploring the moderating role of gym use and exercise motivation. *Body Image*, 4:278–287.
- Hamilton, E. A., Mintz, L., and Kashubeck-West, S. (2007). Predictors of me-

- dia effects on body dissatisfaction in European American women. *Sex Roles*, 56:397–402.
- Hamilton, K. and Waller, G. (1993). Media influences on body size estimation in anorexia and bulimia: An experimental study. *British Journal of Psychiatry*, 162:837–840.
- Hansen, C. H. (1989). Priming sex-role stereotypic event schemas with rock music videos: Effects on impression favorability, trait inferences, and recall of a subsequent male-female interaction. *Basic and Applied Social Psychology*, 10:371–391.
- Hargreaves, D. and Tiggemann, M. (2002). The effect of television commercials on mood and body dissatisfaction: The role of appearance-schema activation. *Journal of Social and Clinical Psychology*, 21:287–308.
- Hargreaves, D. and Tiggemann, M. (2003). The effect of ‘thin ideal’ television commercials on body dissatisfaction and schema activation during early adolescence. *Journal of Youth and Adolescence*, 32:367–373.
- Hargreaves, D. and Tiggemann, M. (2004). Idealized media images and adolescent body image: ‘comparing’ boys and girls. *Body Image*, 1:351–361.
- Harrison, K. (2000). The body electric: Thin-ideal media and eating disorders in adolescents. *Journal of Communication*, 50:119–143.
- Harrison, K. and Cantor, J. (1997). The relationship between media consumption and eating disorders. *Journal of Communication*, 47:40–76.
- Hart, A. E., Leary, M. R., and Rejeski, W. J. (1989). The measurement of social physique anxiety. *Journal of Sport and Exercise Psychology*, 11:94–104.
- Harter, S. (1999). *The construction of the self: A developmental perspective*. Guilford, New York.
- Hausenblas, H. A., Janelle, C. M., Gardner, R. E., and Hagan, A. L. (2003). Affective responses of high and low body satisfied men to viewing physique slides. *Eating Disorders*, 11:101–113.
- Hawkins, N., Richards, P. S., Granley, H. M., and Stein, D. M. (2004). The impact of exposure to the thin-ideal media image on women. *Eating Disorders*, 12:35–50.

- Heatherton, T. F. and Polivy, J. (1991). Development and validation of a scale measuring state self-esteem. *Journal of Personality and Social Psychology*, 60:313–321.
- Heatherton, T. F. and Polivy, J. (1992). Chronic dieting and eating disorders: A spiral model. In Crowther, J. H., Hobfall, S. E., Stephens, M. A. P., and Tennenbaum, D. L., editors, *The etiology of bulimia: The individual and familial context*. Hemisphere, Washington, DC.
- Heinberg, L. J. and Thompson, J. K. (1992). Social comparison: Gender, target importance ratings, and relation to body image disturbance. *Journal of Social Behavior and Personality*, 7:335–344.
- Heinberg, L. J. and Thompson, J. K. (1995). Body image and televised images of attractiveness: A controlled laboratory investigation. *Journal of Social and Clinical Psychology*, 14:325–338.
- Heinberg, L. J., Thompson, J. K., and Stormer, S. (1995). Development and validation of the Sociocultural Attitudes Towards Appearance Scale (SATAQ). *International Journal of Eating Disorders*, 17:81–89.
- Helmreich, R., Stapp, J., and Ervin, C. (1974). The Texas Social Behavior Inventory (TSBI): An objective measure of self-esteem or social competence. *Catalog of Selected Documents in Psychology*, 4:79.
- Henderson-King, D., Henderson-King, E., and Hoffmann, L. (2001). Media images and women's self-evaluations: Social context and importance of attractiveness as moderators. *Personality and Social Psychology Bulletin*, 27:1407–1416.
- Henderson-King, D. and Stewart, A. J. (1994). Women or feminists? Assessing women's group consciousness. *Sex Roles*, 31:505–516.
- Henderson-King, E. and Henderson-King, D. (1997). Media effects on women's body esteem: Social and individual difference factors. *Journal of Applied Social Psychology*, 27:399–417.
- Herman, C. P. and Polivy, J. (1980). Restrained eating. In Stunkard, A. J., editor, *Eating and its disorders*. Saunders, Philadelphia.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Bulletin*, 94:319–340.

- Higgins, E. T. (1989). Continuities and discontinuities in self-regulatory and self-evaluative process: A developmental theory relating self and affect. *Journal of Personality*, 57:407–444.
- Hobza, C. L., Walker, K. E., Yakushko, O., and Peugh, J. L. (2007). What about men? Social comparison and the effects of media images on body and self-esteem. *Psychology of Men & Masculinity*, 8:161–172.
- Hoek, H. W. (2006). Incidence, prevalence and mortality of anorexia nervosa and other eating disorders. *Current Opinion in Psychiatry*, 19:389–394.
- Hofmann, W., Friese, M., and Wiers, R. (2008). Impulsive versus reflective influences on health behavior: A theoretical framework and empirical review. *Health Psychology Review*, 2:111–137.
- Hollin, C. R., Houston, J. C., and Kent, M. F. (1985). Neuroticism, life stress and concern about eating, body weight and appearance in a non-clinical population. *Personality and Individual Differences*, 6:485–492.
- Hollon, S. D. and Kendall, P. C. (1980). Cognitive self-statements in depression: Development of an Automatic Thoughts Questionnaire. *Cognitive Therapy and Research*, 4:383–395.
- Holmstorm, A. J. (2004). The effects of the media on body image: A meta-analysis. *Journal of Broadcasting and Electronic Media*, 48(2):196–217.
- Hudson, J. I., Hirpi, E., Pope, H. G., and Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry*, 61:348–358.
- Ickes, W. J., Wicklund, R. A., and Ferris, C. B. (1973). Objective self awareness and self esteem. *Journal of Experimental Social Psychology*, 9:202–219.
- Illsley, R. and Baker, D. (1991). Contextual variations in the meaning of health inequality. *Social Science and Medicine*, 32:359–365.
- Ip, K. and Jarry, J. L. (2008). Investment in body image for self-definition results in greater vulnerability to the thin media than does investment in appearance management. *Body Image*, 5:59–69.
- Irving, L. M. (1990). Mirror images: Effects of the standard of beauty on the self- and body-esteem of women exhibiting varying levels of bulimic symptoms.

- Journal of Social and Clinical Psychology*, 9:230–242.
- Jane, D. M., Hunter, G. C., and Lozzi, B. M. (1999). Do Cuban American women suffer from eating disorders? Effects of media exposure and acculturation. *Hispanic Journal of Behavioral Sciences*, 21:212–218.
- Jensen, I. and Gutek, B. A. (1982). Attributions and assignment of responsibility for sexual harassment. *Journal of Social Issues*, 38:121–136.
- Johnson, F. and Wardle, J. (2005). Dietary restraint, body dissatisfaction, and psychological distress: A prospective analysis. *Journal of Abnormal Psychology*, 114:119–125.
- Johnson, P. J., McCreary, D. R., and Mills, J. S. (2007). Effects of exposure to objectified male and female media images on men's psychological well being. *Psychology of Men & Masculinity*, 8:95–102.
- Jones, D. C. (2001). Social comparison and body images: Attractiveness comparisons to models and peers among adolescent girls and boys. *Sex Roles*, 45:645–664.
- Jordan, J. H., Spencer, S. J., Zanna, M. P., Hoshino-Browne, E., and Correll, J. (2003). Secure and defensive high self-esteem. *Journal of Personality and Social Psychology*, 85:969–978.
- Joshi, R., Herman, C. P., and Polivy, J. (2004). Self-enhancing effects of exposure to thin-body images. *International Journal of Eating Disorders*, 35:333–341.
- Kalodner, C. (1997). Media influence on male and female non-eating disordered college students: A significant issue. *Eating Disorders*, 5:47–57.
- Kanakis, D. M. and Thelen, M. H. (1995). Parental variables associated with bulimia nervosa. *Addictive Behaviors*, 20:491–500.
- Kawamura, K. Y. (2002). Asian American body images. In Cash, T. F. and Pruzinsky, T., editors, *Body image: A handbook of theory, research, and clinical practice*, pages 243–249. Guilford Press, New York.
- Kelley, C. C., Neufeld, J. M., and Mucher-Eizenman, D. R. (2010). Drive for thinness and drive for muscularity: Opposite ends of the continuum or separate constructs? *Body Image*, 7:74–77.
- Kendler, K. S., Gardner, C. O., and Prescott, C. A. (1998). A population-based

- twin study of self-esteem and gender. *Psychological Medicine*, 28:1402–1409.
- King, N., Touyz, S., and Charles, M. (2000). The effect of body dissatisfaction on women's perceptions of female celebrities. *International Journal of Eating Disorders*, 27:341–347.
- Knauss, C., Paxton, S. J., and Alsaker, F. D. (2007). Relationships amongst body dissatisfaction, internalisation of the media body ideal and perceived pressure from media in adolescent girls and boys. *Body Image*, 4:353–360.
- Koole, S. L., Dijksterhuis, A., and van Knippenberg, A. (2001). What's in a name: Implicit self-esteem and the automatic self. *Journal of Personality and Social Psychology*, 80:669–685.
- Kopp, M., Skrabski, A., Rethelyi, J., Kawachi, I., and Adler, N. E. (2004). Self-rated health, subjective social status and middle-aged mortality in a changing society. *Behavioral Medicine*, 30:65–70.
- Kvalem, I. L., von Soest, T., Roald, H. E., and Skolleborg, K. C. (2006). The interplay of personality and negative comments about appearance in predicting body image. *Body Image*, 3:263–273.
- Labarge, A. S., Cash, T. F., and Brown, T. A. (1998). Use of a modified Stroop Task to examine appearance-schematic information processing in college women. *Cognitive Therapy and Research*, 22:179–190.
- LaFrance, M. and Woodzicka, J. A. (1997). No laughing matter: Women's verbal and nonverbal reactions to sexist humor. In Swim, J. and Stangor, C., editors, *Targets of prejudice*. Academic Press, San Diego, CA.
- Laird, J. D., Alibozak, T., Davainis, D., Deignan, K., Fontanella, K., Hong, J., Levy, B., and Pacheco, C. (1994). Individual differences in the effects of spontaneous mimicry on emotional contagion. *Motivation and Emotion*, 18:231–246.
- Lane, K. A., Banaji, M. R., Nosek, B. A., and Greenwald, A. G. (2007). Understanding and using the Implicit Association Test: IV. What we know (so far) about the method. In Wittenbrink, B. and Schwarz, N., editors, *Implicit measures of attitudes*. The Guilford Press, New York.
- Larson, K. S. and Long, E. (1988). Attitudes toward sex-roles: Traditional or egalitarian. *Sex Roles*, 19:1–12.

- Lavine, H., Sweeney, D., and Wagner, S. H. (1999). Depicting women as sex objects in television advertising: Effects on body dissatisfaction. *Personality and Social Psychology Bulletin*, 25:1049–1058.
- Leary, M. R., Haupt, A. L., Strausser, K. S., and Chokel, J. T. (1998). Calibrating the sociometer: The relationship between interpersonal appraisals and state self-esteem. *Journal of Personality and Social Psychology*, 74:1290–1299.
- Leit, R. A., Gray, J. J., and Pope, H. G. (2002). The media's representation of the ideal male body: A cause for muscle dysmorphia? *International Journal of Eating Disorders*, 31:334–338.
- Levine, M. P. and Murnen, S. K. (2009). "Everybody knows that mass media are/are not [pick one] a cause of eating disorders": A critical review of evidence for a causal link between media, negative body image, and disordered eating in females. *Journal of Social and Clinical Psychology*, 28:9–42.
- Levine, M. P., Smolak, L., Moodey, A. F., and Schuman, M. D. (1994). Normative developmental challenges and dieting and eating disturbances in middle school girls. *International Journal of Eating Disorders*, 15:11–20.
- Lin, L. F. and Kulik, J. A. (2002). Social comparison and women's body satisfaction. *Basic and Applied Social Psychology*, 24:115–123.
- Lorenzen, L. A., Grieve, F. G., and Thomas, A. (2004). Exposure to muscular male models decreases men's body satisfaction. *Sex Roles*, 51:743–748.
- Major, B., Testa, M., and Bylsma, W. H. (1991). Responses to upward and downward social comparisons: The impact of esteem-relevance and perceived control. In Suls, J. and Wills, T. A., editors, *Social comparison: Contemporary theory and research*. Erlbaum, Hillsdale, NJ.
- Martin, M. C. and Kennedy, P. F. (1993). Advertising and social comparison: Consequences for female preadolescents and adolescents. *Journal of Advertising*, 10:513–530.
- McCabe, M. P. and Ricciardelli, L. A. (2003). Sociocultural influences on body image and body changes among adolescent boys and girls. *Journal of Social Psychology*, 143:5–26.
- McCarthy, J. D. and Hoge, D. R. (1982). Analysis of age effects in longitudinal

- studies of adolescent self-esteem. *Developmental Psychology*, 18:372–279.
- McCrae, R. and Costa, P. (1999). A five factor theory of personality. In Pervin, L. A., editor, *Handbook of personality: Theory and research*. Guilford, New York.
- McFarlane, T., Polivy, J., and Herman, C. P. (1998). Effects of false weight feedback on mood, self-evaluation, and food intake in restrained and unrestrained eaters. *Journal of Abnormal Psychology*, 107:312–318.
- McKinley, N. M. and Hyde, J. S. (1996). The Objectified Body Consciousness Scale: Development and validation. *Psychology of Women Quarterly*, 20:181–215.
- McNair, D. M., Lorr, M., and Droppleman, L. F. (1971). *Manual for the Profile of Mood States*. Educational and Industrial Testing Service, San Diego, CA.
- Mellin, L., McNutt, S., Hu, Y., Schreiber, G. B., Crawford, P., and Obarzanek, E. (1991). A longitudinal study of the dietary practices of black and white girls 9 and 10 years old at enrollment: The NHLBI growth and health study. *Journal of Adolescent Health*, 20:27–37.
- Mills, J., Polivy, J., and Herman, C. (2002). Effects of thin body images on eating behavior, mood, and self-perception in restrained and unrestrained eaters. *Personality and Social Psychology Bulletin*, 28:1687–1699.
- Monro, F. J. and Huon, G. F. (2006). Media-portrayed idealized images, self-objectification, and eating behavior. *Eating Behaviors*, 7:375–383.
- Morgan, M. (1982). Television and adolescents' sex role stereotypes: A longitudinal study. *Journal of Personality and Social Psychology*, 43:947–955.
- Morgan, M. (1987). Television, sex-role attitudes, and sex-role behavior. *Journal of Early Adolescence*, 7:269–282.
- Moriarty, C. M. and Harrison, K. (2008). Television exposure and disordered eating among children: A longitudinal panel study. *Journal of Communication*, 58:361–381.
- Myers, P. N. and Biocca, F. A. (1992). The elastic body image: The effect of television advertising and programming on body image distortions in young women. *Journal of Communication*, 42:108–133.

- Myers, T. A. and Crowther, J. H. (2007). Sociocultural pressures, thin-ideal internalization, self-objectification, and body dissatisfaction: Could feminist beliefs be a moderating factor? *Body Image*, 4:296–308.
- Neumark-Sztainer, D. (2005). *I'm, Like, So fat!* The Guilford Press/Guilford Press, New York.
- Nosek, B. A., Greenwald, A. G., and Banaji, M. R. (2005). Understanding and using the Implicit Association Test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin*, 31:166–180.
- Offer, D. and Howard, K. I. (1972). An empirical analysis of the Offer Self Image Questionnaire for Adolescents. *Archives of General Psychiatry*, 27:529–537.
- Ogden, J. and Munday, K. (1996). The effect of the media on body satisfaction: The role of gender and size. *European Eating Disorders Review*, 4:171–182.
- Olivardia, R., Pope, H. G., Borowiecki, J. J., and Cohane, G. H. (2004). Biceps and body image: The relationship between muscularity and self-esteem, depression, and eating disorder symptoms. *Psychology of Men & Masculinity*, 5:112–120.
- Olson, M. A., Fazio, R. H., and Hermann, A. D. (2007). Reporting tendencies underlie discrepancies between implicit and explicit measures of self-esteem. *Psychological Science*, 18:287–291.
- O'Malley, P. M. and Bachman, J. G. (1983). Self-esteem: Change and stability between ages 13 and 23. *Developmental Psychology*, 19:257–268.
- Parnell, K., Sargent, R., Thompson, S. H., Duhe, S. F., Valois, R. F., and Kemper, R. C. (1996). Black and white adolescent females' perceptions of ideal body size. *Journal of School Health*, 66:112–118.
- Paxton, S. J., Schutz, H. K., Wertheim, E. H., and Muir, S. L. (1999). Friendship clique and peer influences on body image concerns, dietary restraint, extreme weight-loss behaviors, and binge eating in adolescent girls. *Journal of Abnormal Psychology*, 108:255–266.
- Pinhas, L., Toer, B. B., Ali, A., Garfinkel, P. E., and Stuckless, N. (1999). The effects of the ideal of female beauty on mood and body satisfaction. *International Journal of Eating Disorders*, 25:223–226.
- Pope, H. G., Phillips, K. A., and Olivardia, R. (2000). *The Adonis complex: The*

- secret crisis of male body obsession*. The Free Press, New York, NY.
- Posavac, H. D., Posavac, S. S., and Posavac, E. J. (1998). Exposure to media images of female attractiveness and concern with body weight among young women. *Sex Roles*, 38:187–201.
- Powell, A. D. and Kahn, A. S. (1995). Racial differences in women's desire to be thin. *International Journal of Eating Disorders*, 17:191–195.
- Reed, D. L., Thompson, J. K., Brannick, M. T., and Sacco, W. P. (1991). Development and validation of the Physical Appearance State and Trait Anxiety Scale. *Journal of Anxiety Disorders*, 5:323–332.
- Regan, P. C. and Cachelin, F. M. (2006). Binge eating and purging in a multi-ethnic community sample. *International Journal of Eating Disorders*, 39:523–526.
- Renzetti, C. (1987). New wave or second stage? Attitudes of college women towards feminism. *Journal of Marriage and the Family*, 37:146–153.
- Ricciardelli, L. A. and McCabe, M. P. (2001). Self-esteem and negative affect as moderators of sociocultural influences on body dissatisfaction, strategies to decrease weight, and strategies to increase muscles among adolescent boys and girls. *Sex Roles*, 44:189–207.
- Roberts, A. and Good, E. (2010). Media images and female body dissatisfaction: The moderating effects of the Five-Factor traits. *Eating Behaviors*, 11:211–216.
- Robins, R. W., Tracy, J. L., Trzesniewski, K., Potter, J., and Gosling, S. D. (2001). Personality correlates of self-esteem. *Journal of Research in Personality*, 35:463–482.
- Rocchio, L. M. (1995). *The pursuit of beauty through thinness and the impact of advertising on college women's attitudes*. PhD thesis, University of Rhode Island.
- Roney, J. R., Lukaszewski, A. W., and Simmons, Z. L. (2007). Rapid endocrine responses of young men to social interactions with young women. *Hormones and Behavior*, 52:326–333.
- Rosen, E. F., Brown, A., Braden, J., Dorsett, H. W., Franklin, D. N., Garlington, R. A., Kent, V. E., Lewis, T. T., and Petty, L. C. (1993). African-American males prefer a larger female body silhouette than do whites. *Bulletin of the*

- Psychonomic Society*, 31:599–601.
- Rosenberg, M. (1965). *Society and adolescent self-image*. Princeton University Press, Princeton, NJ.
- Rucker, C. E. and Cash, T. F. (1992). Body images, body-size perceptions, and eating behaviors among African-American and White college women. *International Journal of Eating Disorders*, 12:291–299.
- Rudman, L. A. and Borgida, E. (1995). The afterglow of construct accessibility: The behavioral consequences of priming men to view women as sexual objects. *Journal of Experimental Social Psychology*, 31:493–517.
- Rudman, L. A., Greenwald, A. G., and McGhee, D. E. (2001). Implicit self-concept and evaluative implicit gender stereotypes: Self and ingroup share desirable traits. *Personality and Social Psychology Bulletin*, 27:1164–1178.
- Rusting, C. (1998). Personality, mood, and cognitive processing of emotional information: Three conceptual frameworks. *Psychological Bulletin*, 124:165–196.
- Rutter, M., Graham, P., Chadwick, O. F. D., and Yule, W. (1976). Adolescent turmoil: Fact or fiction. *Journal of Child Psychology and Psychiatry*, 17:35–56.
- Schooler, C., Feighery, E., and Flora, J. A. (1996). Seventh graders' self-reported exposure to cigarette marketing and its relationship to their smoking behavior. *American Journal of Public Health*, 86:1216–1221.
- Schooler, D., Ward, L. M., Merriwether, A., and Caruthers, A. (2004). Who's that girl: Television's role in the body image development of young white and black women. *Psychology of Women Quarterly*, 28:38–47.
- Schulman, R. G., Kinder, B. N., Powers, P. S., Prange, M., and Glenhorn, A. (1986). The development of a scale to measure cognitive distortions in bulimia. *Journal of Personality Assessment*, 50:630–639.
- Seddon, L. and Berry, N. (1996). Media-induced disinhibition of dietary restraint. *British Journal of Health Psychology*, 1:27–33.
- Shaw, J. (1995). Effects of fashion magazines on body dissatisfaction and eating psychopathology in adolescent and adult females. *European Eating Disorders Review*, 3:15–23.

- Shisslak, C. M., Crago, M., and Estes, L. S. (1995). The spectrum of eating disturbances. *International Journal of Eating Disorders*, 18:209–219.
- Siegel, A. E. (1958). The influence of violence in the mass media upon children's role expectation. *Child Development*, 29:35–56.
- Silberstein, L. R., Mishkind, M. E., Striegel-Moore, R. H., Timko, C., and Rodin, J. (1989). Men and their bodies: A comparison of homosexual and heterosexual men. *Psychosomatic Medicine*, 51:337–346.
- Silberstein, L. R., Striegel-Moore, R. H., Timko, C., and Rodin, J. (1988). Behavioral and psychological implications of body dissatisfaction: Do men and women differ? *Sex Roles*, 19:219–232.
- Skorek, M. and Dunham, Y. (2010a). Media portrayed thinness and its effects in a diverse sample of women: Explicit and implicit measures. Poster session presented at the 90th Annual Convention of the Western Psychological Association, Cancun, Mexico.
- Skorek, M. and Dunham, Y. (2010b). Mirror, mirror on the wall, who is the thinnest of them all? Sexually suggestive TV commercials and their impact on self-esteem and body perception in women of different races. Poster session presented at the 11th Annual Conference of the Society for Personality and Social Psychology, Las Vegas, NV.
- Skorek, M. and Dunham, Y. (2011a). A 'fantasy effect' of viewing idealized body portrayals in men. Paper presented at the 91st Annual Convention of the Western Psychological Association, Los Angeles, CA.
- Skorek, M. and Dunham, Y. (2011b). Self-enhancing effects of exposure to male and female bodies in ethnically diverse men: A fantasy-effect? Poster session presented at the 12th Annual Conference of the Society for Personality and Social Psychology, San Antonio, TX.
- Skorek, M. and Dunham, Y. (under review-a). Mirror, mirror on the wall, who is the thinnest of them all? Media portrayed thinness and its effect on self-esteem, body self-discrepancy and perception of health risks in ethnically diverse women.
- Skorek, M. and Dunham, Y. (under review-b). Self-enhancement following expo-

- sure to idealized body portrayals in ethnically diverse men: A fantasy effect of advertising.
- Skorek, M. and Dunham, Y. (under review-c). Who is harmed by media portrayed thinness? A review of personal moderators.
- Skorek, M., Song, A. V., and Dunham, Y. (2011). Mediators of the relationship between personality and body dissatisfaction. Poster session presented at the 91st Annual Convention of the Western Psychological Association, Los Angeles, CA.
- Skorek, M., Song, A. V., and Dunham, Y. (under review). Personality traits and body image: Exploring the mediational relationships.
- Slade, P. and Russell, G. F. M. (1973). Awareness of body dimensions in anorexia nervosa: Cross-sectional and longitudinal studies. *Psychological Medicine*, 3:188–199.
- Smeesters, D. and Mandel, N. (2006). Positive and negative media image effects on self. *Journal of Consumer Research*, 32:576–582.
- Smith, M. C. and Thelen, M. H. (1984). Development and validation of a test for bulimia. *Journal of Consulting and Clinical Psychology*, 52:863–872.
- Smith, M. D. and Self, G. D. (1981). Feminists and traditionalists: An attitudinal comparison. *Sex Roles*, 7:183–188.
- Smith, R. (2000). Linking goal attainment to happiness: A moderator of the media effects on eating disorder? *Dissertation-Abstract-International: Section B: The Sciences and Engineering*, 61(9-B):5008.
- Smolak, L. and Striegel-Moore, R. H. (2001). Challenging the myth of the golden girl: Ethnicity and eating disorders. In Striegel-Moore, R. H. and Smolak, L., editors, *Eating disorders: Innovative directions in research and practice*, pages 111–132. American Psychological Association, Washington, DC.
- Snyder, M. (1974). The self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, 30:526–537.
- Snyder, M. and DeBono, K. G. (1985). Appeals to image and claims about quality: Understanding the psychology of advertising. *Journal of Personality and Social Psychology*, 49:125–139.

- Snyder, M. and Gangestad, S. (1986). On the nature of self-monitoring: Matters of assessment, matters of validity. *Journal of Personality and Social Psychology*, 51:125–139.
- Spalding, L. R. and Hardin, C. D. (1999). Unconscious unease and self-handicapping: Behavioral consequences of individual differences in implicit and explicit self-esteem. *Psychological Science*, 10:535–539.
- Spence, J. T. and Helmreich, R. C. (1978). *Masculinity and femininity: Their psychological dimensions, correlations, and antecedents*. University of Texas Press, Austin.
- Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., and Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory*. Consulting Psychologists Press, Palo Alto, CA.
- Stein, D. M. (1991). The anorexia bulimia inventory: Assessing primary and comorbid problems in eating disorders. Unpublished manuscript.
- Stice, E., Schupak-Neuberg, E., Shaw, H. E., and Stein, R. I. (1994). Relation of media exposure to eating disorder symptomatology: An examination of mediating mechanisms. *Journal of Abnormal Psychology*, 103:836–840.
- Stice, E. and Shaw, H. E. (1994). Adverse effects of the media portrayed thin-ideal on women and linkages to bulimic symptomatology. *Journal of Social and Clinical Psychology*, 13:288–308.
- Strahan, E. J., LaFrance, A., Wilson, A. E., Ethier, N., Spencer, S. J., and Zanna, M. P. (2008). Victoria's dirty secret: How sociocultural norms influence adolescent girls and women. *Personality and Social Psychology Bulletin*, 34:299–301.
- Striegel-Moore, R. H. and Bulik, C. M. (2007). Risk factors for eating disorders. *American Psychologist*, 62:181–198.
- Striegel-Moore, R. H., Rosselli, F., Perrin, N., DeBar, L., Wilson, G. T., May, A., and Kraemer, H. C. (2009). Gender differences in the prevalence of eating disorder symptoms. *International Journal of Eating Disorders*, 42:471–474.
- Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology*, 18:643–662.
- Strowman, S. R. (1996). *The relation between media exposure and body satisfaction:*

- An examination of moderating variables derived from social comparison theory.* PhD thesis, University of Hampshire, Durham.
- Strowman, S. R. (1999). Comparison to Models Survey. In Thompson, K. J., Heinberg, L. J., Altabe, M., and Tantleff-Dunn, S., editors, *Exacting beauty: Theory, assessment and treatment of body image disturbance*, page 144. American Psychological Association, Washington, DC.
- Stunkard, A. J., Sorensen, T., and Schulsinger, F. (1983). Use of the Danish adoption register for the study of obesity and thinness. In Kety, S., editor, *The genetics of neurological and psychiatric disorders*. Raven Press, New York.
- Swami, V., Frederick, D. A., Aavik, T., Alcalay, L., Allik, J., Anderson, D., Andriantanto, S., Arora, A., Brannstrom, A., Cunningham, J., Danel, D., Dorosiewicz, K., Forbes, G. B., Furnham, A., Greven, C. U., Halberstadt, J., Hao, S., Haubner, T., Hwang, C. S., Inman, M., Jaafar, J. L., Johansson, J., Jung, J., Keser, A., Kretzschmar, U., Lachenicht, L., ad K. Locke, N. P. L., Loonqvist, J. E., Lopez, C., Loutzenhser, L., Maisel, N. C., McCabe, M. P., McCreary, D. R., McKibbin, W. F., Mussap, A., Neto, F., Nowell, C., Alampay, L. P., Pillai, S. K., Pokrajac-Bulian, A., Proyer, R. T., Quintelier, K., Ricciardelli, L. A., Rozmus-Wrzesinska, M., Ruch, W., Russo, T., Schutz, A., Shackelford, T. K., Shashidharan, S., Simonettu, F., Sinniah, D., Swami, M., Vandermassen, G., van Duynslaeger, M., Verkasalo, M., Voracek, M., Yee, C. K., Zhang, E. X., Zhang, X., and Zivcic-Becirevic, I. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: Results of the International Body Project I. *Personality and Social Psychology Bulletin*, 36:309–325.
- Swami, V., Hadji-Michael, M., and Furnham, A. (2008). Personality and individual difference correlates of positive body image. *Body Image*, 5:322–325.
- Swann, W. B. (1985). Self-verification: Bringing social reality into harmony with the self. In Greenwald, A. G., editor, *Social psychological perspectives on the self*, volume 2, pages 33–66. Erlbaum.
- Teachman, B. A. (2001). Implicit associations for fear-relevant stimuli among individuals with snake and spider fears. *Journal of Abnormal Psychology*, 110:226–

235.

- Teachman, B. A. (2002). Untangling the web of fear associations: An investigation of automatic processing in spider phobia. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 63:1577.
- Teachman, B. A. and Brownell, K. D. (2001). Implicit anti-fat bias among health professionals: Is anyone immune? *International Journal of Obesity*, 25:1525–1531.
- Teachman, B. A., Cody, M. W., and Clerkin, E. L. (2010). Clinical applications of implicit social cognition theories. In Gawronski, B. and Payne, B. K., editors, *Handbook of Implicit Social Cognition: Measurement, Theory, and Applications*, pages 489–521. Guilford Press, New York.
- Thompson, J. K. (1990). *Body image disturbance: Assessment and treatment*. Pergamon, Elmsford, NY.
- Thompson, J. K., Cattarin, J., Fowler, B., and Fisher, E. (1995). The Perception of Teasing Scale (POTS): A revision and extension of the Physical Appearance-Related Teasing Scale (PARTS). *Journal of Personality Assessment*, 65:146–157.
- Thompson, J. K., Heinberg, L. J., Altabe, M., and Tantleff-Dunn, S. (1999). *Examining beauty: Theory, assessment and treatment of body image disturbance*. American Psychological Association, Washington, DC.
- Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., and Heinberg, L. S. (2004). The Sociocultural Attitudes Towards Appearance Scale-3 (SATAQ-3): Development and validation. *International Journal of Eating Disorders*, 35:293–304.
- Thompson, S. H., Sargent, R. G., and Kemper, K. A. (1996). Black and white adolescent males' perceptions of ideal body size. *Sex Roles*, 34:391–406.
- Thornton, B. and Maurice, J. K. (1997). Physique contrast effect: Adverse impact of idealized body images for women. *Sex Roles*, 37:433–439.
- Thornton, B. and Maurice, J. K. (1999). Physical attractiveness contrast effect and the moderating influence of self-consciousness. *Sex Roles*, 40:379–392.
- Thornton, B. and Moore, S. (1993). Physical attractiveness contrast effect: Impli-

- cations for self-esteem and evaluations of the social self. *Personality and Social Psychology Bulletin*, 19:474–480.
- Tiggemann, M. (2003). Media exposure, body dissatisfaction and disordered eating: Television and magazines are not the same. *European Eating Disorders Review*, 11:418–430.
- Tiggemann, M. (2005). Television and adolescent body image: The role of program content and viewing motivation. *Journal of Social and Clinical Psychology*, 24:361–381.
- Tiggemann, M. and McGill, B. (2004). The role of social comparison in the effect of magazine advertisements on women's mood and body dissatisfaction. *Journal of Social and Clinical Psychology*, 23:23–44.
- Tiggemann, M. and Pickering, A. S. (1996). Role of television in adolescent women's body dissatisfaction and drive for thinness. *International Journal of Eating Disorders*, 20:199–203.
- Timko, C., Striegel-Moore, R. H., Silberstein, L. R., and Rodin, J. (1987). Femininity/masculinity and disordered eating in women: How are they related? *International Journal of Eating Disorders*, 6:701–712.
- Twenge, J. M. and Campbell, W. K. (2001). Age and birth cohort differences in self-esteem: A cross-temporal meta-analysis. *Personality and Social Psychology Review*, 5:321–344.
- Tylka, T. L. (2004). The relationship between body dissatisfaction and eating disorder symptomatology: An analysis of moderating variables. *Journal of Counseling Psychology*, 51:178–191.
- van der Meij, L., Buunk, A. P., and Salvador, A. (2010). Contact with attractive women affects the release of cortisol in men. *Hormones and Behavior*, 58:501–505.
- van Hoeken, D., Lucas, A. R., and Hoek, H. W. (1998). Epidemiology. In Hoek, H. W., Treasure, J. L., and Katzman, M. A., editors, *Neurobiology in the treatment of eating disorders*. Wiley, New York.
- van Strien, T., Frijters, J. E., Bergers, G. P., and Defares, P. B. (1986). Dutch eating behaviour questionnaires for the assessment of restrained, emotional, and

- external eating behaviour. *International Journal of Eating Disorders*, 5:295–315.
- Vartanian, L. R., Giant, C. L., and Passino, R. M. (2001). "Ally McBeal vs. Arnold Schwarzenegger": Comparing mass media, interpersonal feedback and gender as predictors of satisfaction with body thinness and muscularity. *Social Behavior and Personality*, 29:711–724.
- Want, S. C. (2009). Meta-analytic moderators of experimental exposure to media portrayals of women on female appearance satisfaction: Social comparisons as automatic processes. *Body Image*, 6:257–269.
- Warren, C. S., Gleaves, D. H., Cepeda-Benito, A., del Carmen-Fernandez, M., and Rodriguez-Riuz, S. (2005). Ethnicity as a protective factor against internalization of a thin ideal and body dissatisfaction. *International Journal of Eating Disorders*, 37:241–249.
- Watson, D. and Clark, L. A. (1997). Extroversion and its positive emotional core. In Hogan, R., Johnson, J., and Briggs, S., editors, *Handbook of personality psychology*, pages 167–193. Academic Press, San Diego.
- Watson, D., Suls, J., and Haig, J. (2002). Global self-esteem in relation to structural models of personality and affectivity. *Journal of Personality and Social Psychology*, 83:185–197.
- Wertheim, E. H., Paxton, S. J., and Tilgner, L. (2004). Test-retest reliability and construct validity of Contour Drawing Rating Scale scores in a sample of early adolescent girls. *Body Image*, 1:199–205.
- Wheeler, L. (1966). Motivation as a determinant of upward comparison. *Journal of Experimental Social Psychology*, 2:27–31.
- Wiers, R., Houben, K., Roefs, A., de Jong, P., Hofmann, W., and Stacy, A. (2010). Implicit cognition in health psychology: Why common sense goes out the window. In Gawronski, B. and Payne, B. K., editors, *Handbook of Implicit Social Cognition: Measurement, Theory, and Applications*, pages 462–488. Guilford Press, New York.
- Wilcox, K. and Laird, J. D. (2000). The impact of media images of super-slender women on women's self-esteem: Identification, social comparison and

- self-perception. *Journal of Research in Personality*, 34:278–286.
- Wildes, J., Emery, R., and Simons, A. (2001). The roles of ethnicity and culture in the development of eating disturbance and body dissatisfaction: A meta-analytic review. *Clinical Psychology Review*, 21:521–551.
- Williams, T. L., Cepeda-Benito, D. H. G. A., Erath, S. A., and Cororve, M. B. (2001). The reliability and validity of a group-administered version of the Body Image Assessment. *Assessment*, 8:37–46.
- Williamson, D. A., Netemeyer, R. G., Jackman, L. P., Andersin, D. A., Funsch, C. L., and Rabalais, J. Y. (1995). Structural equation modeling of risk factors for the development of eating disorder symptoms in female athletes. *International Journal of Eating Disorders*, 17:389.
- Wilson, T. D., Lindsey, S., and Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, 107:101–126.
- Yamamiya, Y., Cash, T. F., Melnyk, S. E., Posavac, H. D., and Posavac, S. S. (2005). Women's exposure to thin-and-beautiful media images: Body image effects of media-ideal internalization and impact-reduction interventions. *Body Image*, 2:74–80.
- Zeiger-Hill, V. (2005). Discrepancies between implicit and explicit self-esteem: Implications for narcissism and self-esteem instability. *Journal of Personality*, 74:119–144.
- Zhang, Y., Dixon, T. L., and Conrad, K. (2009). Rap music videos and African American women's body image: The moderating role of ethnic identity. *Journal of Communication*, 59:262–278.

Appendix A

Questionnaires & scales

A.1 Overview of the scoring of all explicit measures

Table A.1: Overview of the scoring of all explicit measures.

Measure	Answering scale values	Scoring type	Range of scores	Maximum value indicates
Actual-ideal body discrepancy (PBIS)	1 - 9	Difference (2 items)	0 - 8	A very large discrepancy between one's actual and ideal body size
Agreeableness (TIPI)	1 - 7	Average (2 items)	1 - 7	Very high agreeableness
Awareness (SATAQ)	1 - 5	Sum (10 items)	10 - 50	Very high awareness of sociocultural ideals
Body dissatisfaction* (BSQ)	1 - 6	Sum (34 items)	6 - 204	Very high body dissatisfaction
Body dissatisfaction (EDI-BD)	0 - 3	Sum (9 items)	0 - 27	Very high body dissatisfaction
Body esteem (BES)	1 - 5	Sum (35 items)	35 - 175	Strong positive feelings about one's body parts and functions
Comparison tendency (CMS)	1 - 5	Sum (8 items)	8 - 40	A very strong tendency to compare oneself to media models
Conscientiousness (TIPI)	1 - 7	Average (2 items)	1 - 7	Very high conscientiousness
Emotional stability (TIPI)	1 - 7	Average (2 items)	1 - 7	Very high emotional stability
Extraversion (TIPI)	1 - 7	Average (2 items)	1 - 7	Very high extraversion
Internalization (SATAQ)	1 - 5	Sum (11 items)	11 - 55	Very high internalization of sociocultural ideals
Media exposure	0 - 24	Sum (3 items)	0 - 72	Extremely high media exposure
Openness (TIPI)	1 - 7	Average (2 items)	1 - 7	Very high openness
Physical attractiveness** (BES)	1 - 5	Sum (11 items)	11 - 55	Strong positive feelings about one's physical attractiveness
Physical condition (BES)	1 - 5	Sum (13/men) (9/women)	13 - 65 9 - 45	Strong positive feelings about one's physical condition
Self-esteem (Feeling thermometer)	0 - 100	Difference (2 items)	0 - 100	Very high self-esteem
Self-esteem (RSES)	0 - 3	Sum (10 items)	0 - 30	Very high self-esteem
Self-esteem (Likert scale)	1 - 7	Average (12 items)	1 - 7	Very high self-esteem
Sexual attractiveness* (BES)	1 - 5	Sum (13 items)	13 - 65	Strong positive feelings about one's sexual attractiveness
Subjective SES	1 - 10	n/a (1 item)	1 - 10	Highest SES
Upper body strength** (BES)	1 - 5	Sum (9 items)	9 - 45	Strong positive feelings about one's upper body strength
Weight concern* (BES)	1 - 5	Sum (10 items)	10 - 50	Lack of weight concern

Note. BES - Body Esteem Scale (Franzoi and Shields, 1984), BSQ - Body Shape Questionnaire (Cooper et al., 1987), CTM - Comparison to Models (Strowman, 1996), EDI-BD - Body Dissatisfaction subscale of the Eating Disorder Inventory (Garner et al., 1983), Feeling thermometer for self-esteem (Greenwald et al., 2002), Likert scale for self-esteem (Greenwald et al., 2002), PBIS - Pictorial Body Image Scale (Stunkard et al., 1983), RSES - Rosenberg Self-Esteem Scale (Rosenberg, 1965), SATAQ - Sociocultural Attitudes Towards Appearance Questionnaire (Cusumano and Thomspson, 1997), TIPI - Ten Item Personality Inventory (Gosling, et al., 2003)

*Measure for women only; **For men only

A.2 Pictorial Body Image Scale

Source: Stunkard, A. J., Sorensen, T., and Schulsinger, F. (1983). Use of the Danish adoption register for the study of obesity and thinness. In Kety, S., editor, *The genetics of neurological and psychiatric disorders*. Raven Press, New York.

Instructions: Nine drawings of female/male figures are presented below. Please look at them carefully and answer the following questions by referring to a specific figure's number.

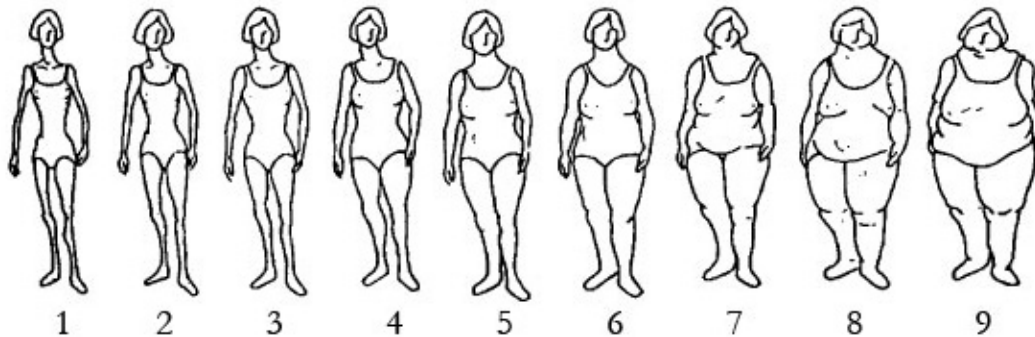


Figure A.1: Figure Rating Scale for women (Stunkard, et al., 1983).

Questions:

1. Which drawing looks most like your own figure?
2. Which figure do you most want to look like?
3. Which figure do you think most women want to look like?
4. Which figure do you think most men find most attractive?

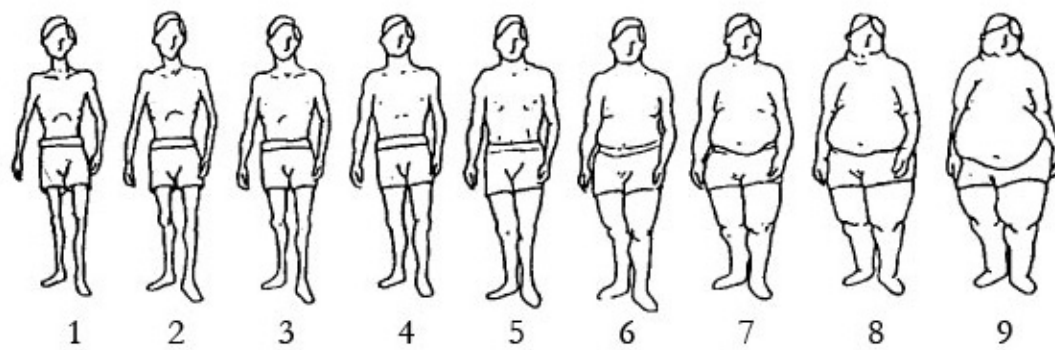


Figure A.2: Figure Rating Scale for men (Stunkard, et al., 1983).

Questions:

1. Which drawing looks most like your own figure?
2. Which figure do you most want to look like?
3. Which figure do you think most men want to look like?
4. Which figure do you think most women find most attractive?

A.3 Feeling thermometer of self-esteem

Source: Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., and Mellott, D. S. (2002). Unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, 109:325.

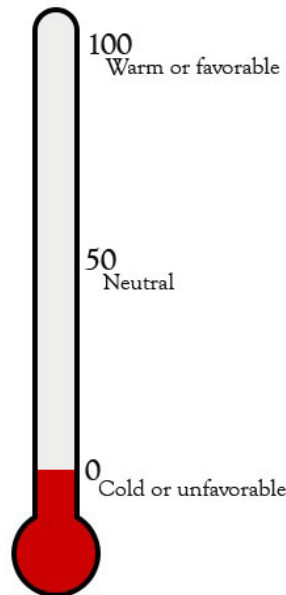


Figure A.3: Feeling thermometer of self-esteem (Greenwald et al, 2002; visualization by M. Skorek).

Instructions: Please state how warmly do you feel about *yourself* by placing a horizontal mark (—) on the thermometer. Please label that mark.

Now, please state how warmly do you feel about *other people* by placing a horizontal mark (—) on the thermometer. Please label that mark.

A.4 Rosenberg Self-Esteem Scale (RSES)

Source: Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree, circle **SD**.

1.	On the whole, I am satisfied with myself.	SA	A	D	SD
2.*	At times, I think I am no good at all.	SA	A	D	SD
3.	I feel that I have a number of good qualities.	SA	A	D	SD
4.	I am able to do things as well as most other people.	SA	A	D	SD
5.*	I feel I do not have much to be proud of.	SA	A	D	SD
6.*	I certainly feel useless at times.	SA	A	D	SD
7.	I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
8.*	I wish I could have more respect for myself.	SA	A	D	SD
9.*	All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
10.	I take a positive attitude toward myself.	SA	A	D	SD

Figure A.4: Rosenberg Self-Esteem Scale (Rosenberg, 1965).

Health-related items (added to the original questionnaire but not included in the self-esteem score):

11. I try to have a healthy diet.
12. I think I exercise enough every week.
13. I think my health has an impact on my performance at school.
14. I am concerned about my health.

Note: *Reverse keyed.

Answering scale: Strongly Agree (1), Agree (2), Disagree (3), Strongly disagree (4). Response values: Strongly Agree (3), Agree (2), Disagree (1), Strongly disagree (0).

A.5 Likert-like scale of self-esteem

Source: Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., and Mellott, D. S. (2002). Unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, 109: 325.

Instructions: For each of the following words, please indicate to what extent the given word is characteristic of you.

happy	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
gold	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
pain	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
pleasure	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
stink	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
smile	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
filth	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
joy	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
gloom	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
death	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
warmth	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>
agony	1 <i>not at all characteristic</i>	2	3	4	5	6	7 <i>extremely characteristic</i>

Figure A.5: Likert-like scale of self-esteem (Greenwald et al., 2002).

A.6 Body Dissatisfaction subscale of the Eating Disorder Inventory (BD-EDI)

Source: Garner, D. M., Olmstead, M. P., and Polivy, J. (1983). Development and validation of a multidimensional Eating Disorder Inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2: 1534.

Instructions: Please read the following statements and indicate how often you experience each of the following thoughts.

Answering scale: Always, Usually, Often, Sometimes, Rarely, Never. Response values: Always (3), Usually (2), Often (1), Sometimes/Rarely/Never (0).

■ BODY DISSATISFACTION: Subscale Item, Item-Total Correlations, Reliability Coefficients for AN and FC groups.			
2.	I think that my stomach is too big.	.51	.51
9.	I think that my thighs are too large.	.69	.68
12.*	I think that my stomach is just the right size.	.66	.58
19.*	I feel satisfied with the shape of my body.	.50	.65
31.*	I like the shape of my buttocks.	.69	.68
45.	I think my hips are too big.	.78	.75
55.*	I think that my thighs are just the right size.	.73	.78
59.	I think by buttocks are too large.	.83	.73
62.*	I think that my hips are just the right size.	.70	.78
Reliability Coefficients (Standardized Cronbach's Alphas) AN = .90 FC = .91			

Figure A.6: Body Dissatisfaction subscale of the Eating Disorder Inventory (Garner, et al., 1983).

A.7 Body Shape Questionnaire (BSQ)

Source: Cooper, P. J., Taylor, M. J., Cooper, Z. and Fairburn, C. G. (1987). The development and validation of the Body Shape Questionnaire. *International Journal of Eating Disorders*, 6: 485–494.

Instructions: Please read and answer all of the following questions. **OVER THE PAST FOUR WEEKS:**

Answering scale: Always (6), Very Often (5), Often (4), Sometimes (3), Rarely (2), Never (1).

Questions:

1. Has feeling bored made you brood about your shape?
2. Have you been so worried about your shape that you have been feeling that you ought to diet?
3. Have you thought that your thighs, hips or bottom are too large for the rest of you?
4. Have you been afraid that you might become fat (or fatter)?
5. Have you worried about your flesh not being firm enough?
6. Has feeling full (e.g., after eating a large meal) made you feel fat?
7. Have you felt so bad about your shape that you have cried?
8. Have you avoided running because your flesh might wobble?
9. Has being with thin women made you feel self-conscious about your shape?
10. Have you worried about your thighs spreading out when sitting down?
11. Has eating even a small amount of food made you feel fat?
12. Have you noticed the shape of other women and felt that your own shape compared unfavourably?
13. Has thinking about your shape interfered with your ability to concentrate (e.g., while watching television, reading, listening to conversations)?
14. Has being naked, such as when taking a bath, made you feel fat?

15. Have you avoided wearing clothes which make you particularly aware of the shape of your body?
16. Have you imagined cutting off fleshy areas of your body?
17. Has eating sweets, cakes, or other high calorie food made you feel fat?
18. Have you not gone out to social occasions (e.g., parties) because you have felt bad about your shape?
19. Have you felt excessively large and rounded?
20. Have you felt ashamed of your body?
21. Has worry about your shape made you diet?
22. Have you felt happiest about your shape when your stomach has been empty (e.g., in the morning)?
23. Have you thought that you are the shape you are because you lack self-control?
24. Have you worried about other people seeing rolls of flesh around your waist or stomach?
25. Have you felt that it is not fair that other women are thinner than you?
26. Have you vomited in order to feel thinner?
27. When in company have you worried about taking up too much room (e.g., sitting on a sofa or a bus seat)?
28. Have you worried about your flesh being dimply?
29. Has seeing your reflection (e.g., in a mirror or shop window) made you feel bad about your shape?
30. Have you pinched areas of your body to see how much fat there is?
31. Have you avoided situations where people could see your body (e.g., communal changing rooms or swimming baths)?
32. Have you taken laxatives in order to feel thinner?
33. Have you been particularly self-conscious about your shape when in the company of other people?
34. Has worry about your shape made you feel you ought to exercise?

A.8 The Body Esteem Scale (BES)

Source: Franzoi, S. L., and Shields, S. A. (1984). The Body Esteem Scale: Multidimensional structure and sex differences in a college population. *Journal of Personality Assessment*, 48: 173–178.

Instructions: On this page are listed a number of body parts and functions. Please read each item and indicate how you feel about this part or function of your own body using the following scale:

- 1 - Have strong negative feelings
- 2 - Have moderate negative feelings
- 3 - Have no feeling one way or the other
- 4 - Have moderate positive feelings
- 5 - Have strong positive feelings

Table A.2: The Body Esteem Scale - Items and factor loadings.

No.	Body part/function	Factor loading	
		Male	Female
1.	body scent		SA
2.	appetite	PC	WC
3.	nose	PA	SA
4.	physical stamina	PC	PC
5.	reflexes	PC	PC
6.	lips	PA	SA
7.	muscular strength	UBS	PC
8.	waist	PC	WC
9.	energy level	PC	PC
10.	thighs	PC	WC
11.	ears	PA	SA
12.	biceps	UBS	PC
13.	chin	PA	SA
14.	body build	UBS	WC
15.	physical coordination	UBS, PC	PC
16.	buttocks	PA	WC
17.	agility	PC	PC
18.	width of shoulders	UBS	
19.	arms	UBS	
20.	chest or breasts	UBS	SA
21.	appearance of eyes	PA	SA
22.	cheeks or cheekbones	PA	SA
23.	hips	PA	WC
24.	legs		WC
25.	figure or physique	UBS, PC	WC
26.	sex drive	UBS	SA
27.	feet	PA	
28.	sex organs	PA	SA
29.	appearance of stomach	PC	WC
30.	health	PC	PC
31.	sex activities		SA
32.	body hair		SA
33.	physical condition	PC	PC
34.	face	PA	SA
35.	weight	PC	WC

Note: PA - Physical Attractiveness, PC - Physical Condition, SA - Sexual Attractiveness, UBS - Upper Body Strength, WC - Weight Concern

A.9 Comparison to Models Survey

Source: Strowman, S. R. (1996). *The relation between media exposure and body satisfaction: An examination of moderating variables derived from social comparison theory*. An unpublished doctoral dissertation. University of Hampshire, Durham.

Instructions: Please use this scale to answer the items below.

Never	Once in a while	About half of the time	Most of the time	Always
1	2	3	4	5

When you see models of your own sex in magazines, how often do you compare yourself to them

1. in general?	1	2	3	4	5
2. in terms of career success?	1	2	3	4	5
3. in terms of eating habits?	1	2	3	4	5
4. in terms of exercise habits?	1	2	3	4	5
5. in terms of happiness?	1	2	3	4	5
6. in terms of intelligence?	1	2	3	4	5
7. in terms of physical appearance?	1	2	3	4	5
8. in terms of popularity?	1	2	3	4	5

Figure A.7: Comparison to Models Survey (Strowman, 1996).

A.10 Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ)

Source: Cusumano, D. and Thompson, J. (1997). Body image and body shape ideals in magazines: Exposure, awareness, and internalization. *Sex Roles*, 37:701721.

Instructions: Please read each of the following items and indicate an answer that best reflect your agreement with the statement.

Answering scale: 1 (completely disagree) - 5 (completely agree).

Questions:

1. I would like my body to look like the women (men) who appear in TV shows and movies.
2. I believe that clothes look better on women (men) that are in good physical shape.
3. Music videos that show women (men) who are in good physical shape make me wish that I were in better physical shape.
4. I do not wish to look like the female (male) models who appear in magazines.*
5. I tend to compare my body to TV and movie stars.
6. In our society, fat people are regarded as attractive.
7. Photographs of physically fit women (men) make me wish that I had a better muscle tone.
8. Attractiveness is very important if you want to get ahead in our culture.
9. It's important for people to look attractive if they want to succeed in today's culture.
10. Most people believe that a toned and physically fit body improves how you look.
11. People think that the more attractive you are, the better you look in clothes.
12. In today's society, it's not important to always look attractive.*
13. I wish I looked like the women (men) pictured in magazines who model underwear.
14. I often read magazines and compare my appearance to the female (male) models.
15. People with well-proportioned bodies look better in clothes.

16. A physically fit woman (man) is admired for her (his) looks more than someone who is not fit and toned.
17. How I look does not affect my mood in social situations.*
18. People find individuals who are in shape more attractive than individuals who are not in shape.
19. In our culture, someone with a well-built body has a better chance of obtaining success.
20. I often find myself comparing my physique to that of athletes pictured in magazines.
21. I do not compare my appearance to people I consider very attractive.*

*Reverse keyed.

Awareness Scale: items 6, 8, 9, 10, 11, 12, 15, 16, 18, 19.

Internalization Scale: items 1, 2, 3, 4, 5, 7, 13, 14, 17, 20, 21.

A.11 Ten-Item Personality Inventory (TIPI)

Source: Gosling, S. D., Rentfrow, P. J., and W. B. Swann, J. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*: 504-528.

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

I see myself as:

1. ____ Extraverted, enthusiastic.
2. ____ Critical, quarrelsome.
3. ____ Dependable, self-disciplined.
4. ____ Anxious, easily upset.
5. ____ Open to new experiences, complex.
6. ____ Reserved, quiet.
7. ____ Sympathetic, warm.
8. ____ Disorganized, careless.
9. ____ Calm, emotionally stable.
10. ____ Conventional, uncreative.

Figure A.8: Ten-Item Personality Inventory (Gosling, et al., 2003).

A.12 MacArthur Scale of Subjective Social Status

Source: Goodman, E., Adler, N. E., Kawachi, I., Frazier, L. A., Huang, B., Colditz, G. A. (2001). Adolescents' perceptions of social status: Development and Evaluation of a New Indicator. *Pediatrics*, 108, 1-8.

Think of this ladder as representing where people stand in the United States.

At the **top** of the ladder are the people who are the best off – those who have the most money, the most education and the most respected jobs. At the **bottom** are the people who are the worst off – who have the least money, least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Where would you place yourself on this ladder?

Please place a large "X" on the rung where you think you stand at this time in your life, relative to other people in the United States.



Figure A.9: SES ladder (Retrieved from <http://www.macses.ucsf.edu/>).

Think of this ladder as representing where people stand in their communities.

People define community in different ways; please define it in whatever way is most meaningful to you. At the **top** of the ladder are the people who have the highest standing in their community. At the **bottom** are the people who have the lowest standing in their community.

Where would you place yourself on this ladder?

Please place a large "X" on the rung where you think you stand at this time in your life, relative to other people in your community.



Figure A.10: Community ladder (Retrieved from <http://www.macses.ucsf.edu/>).

Appendix B

Screenshots of advertisements used in priming

B.1 TV ads portraying thin and attractive women

Below you can find screenshots of all advertisements portraying thin and attractive women that were used in priming tasks in experiments described above. All of the following ads were used in studies described in Chapters 3 and 4, and their subset in studies described in Chapters 7 and 8.

Note. Models in advertisements portraying men or women (excluding car ads) were rated by male and female participants ($17 \leq n \leq 21$) on three characteristics - thinness, attractiveness, and strength - using a 7-point Likert-type scale. Higher scores are indicating a thinner, more attractive, and stronger evaluation of female or male models. Mean ratings for these three model characteristics are presented for each advertisement below.



Figure B.1: *Sensi* by Giorgio Armani (fragrance). Average attractiveness rating 5.53, thinness 5.88, strength 3.94.

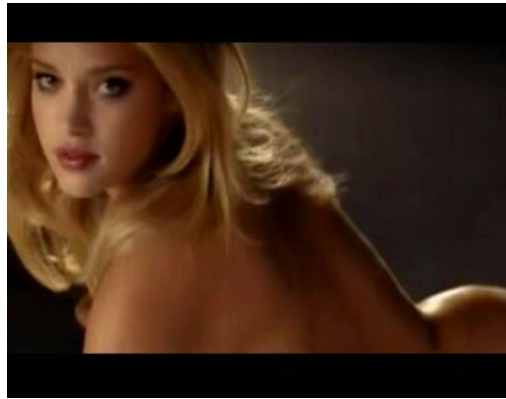


Figure B.2: *Le Rouge* by Chanel (lipstick). Average attractiveness rating 6.06, thinness 5.76, strength 4.41.



Figure B.3: *Xenergy* (energy drink). Average attractiveness rating 6.00, thinness 5.24, strength 5.06.



Figure B.4: *Shalimar* by Guerlain (fragrance). Average attractiveness rating 5.67, thinness 6.05, strength 3.62.



Figure B.5: *Guess* (clothing). Average attractiveness rating 5.95, thinness 6.47, strength 3.95.



Figure B.6: *J'adore* by Dior (fragrance). Average attractiveness rating 5.67, thinness 5.71, strength 4.24.



Figure B.7: *Old Navy* (beachwear). Average attractiveness rating 6.10, thinness 6.29, strength 4.62.



Figure B.8: *Dreaming* by Tommy Hilfiger (fragrance). Average attractiveness rating 6.71, thinness 6.48, strength 4.29.



Figure B.9: *Versace* by Versace (fragrance). Average attractiveness rating 6.24, thinness 6.43, strength 4.00.



Figure B.10: *Woman* by Versace (fragrance). Average attractiveness rating 5.75, thinness 6.50, strength 2.65.



Figure B.11: *Body Bare* by Victoria's Secret (underwear). Average attractiveness rating 5.85, thinness 5.85, strength 3.65.



Figure B.12: *Dream Angels Heavenly* by Victoria's Secret (fragrance). Average attractiveness rating 6.55, thinness 6.25, strength 3.90.



Figure B.13: *Victoria's Secret* (underwear). Average attractiveness rating 6.53, thinness 6.26, strength 4.37.



Figure B.14: *Pushup* by Victoria's Secret (underwear). Average attractiveness rating 6.38, thinness 5.90, strength 4.33.



Figure B.15: *Victoria's Secret* (underwear). Average attractiveness rating 6.53, thinness 6.74, strength 4.26.

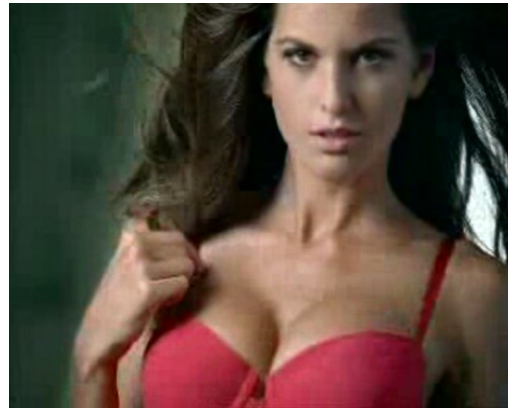


Figure B.16: *Victoria's Secret* (underwear). Average attractiveness rating 6.47, thinness 6.42, strength 4.58.

B.2 TV ads portraying muscular and attractive men

Screenshots of all advertisements portraying muscular and attractive men, used in priming tasks, are presented below. All of the following ads were used in study described in Chapter 4.



Figure B.17: *Acqua di Gio* by Giorgio Armani (fragrance). Average attractiveness rating 5.88, thinness 4.65, strength 6.41.



Figure B.18: *Aussiebum* (beachwear). Average attractiveness rating 5.24, thinness 4.76, strength 6.18.



Figure B.19: *Aussiebum* (underwear). Average attractiveness rating 4.71, thinness 4.88, strength 6.12.



Figure B.20: *Aussiebum* (underwear). Average attractiveness rating 4.48, thinness 4.24, strength 6.43.



Figure B.21: *Aussiebum* (beachwear). Average attractiveness rating 6.05, thinness 4.95, strength 6.62.



Figure B.22: *Pure* by Hugo Boss (fragrance). Average attractiveness rating 6.14, thinness 4.86, strength 6.00.



Figure B.23: *Number six* by Hugo Boss (fragrance). Average attractiveness rating 5.76, thinness 4.90, strength 5.24.



Figure B.24: *Man* by Calvin Klein (fragrance). Average attractiveness rating 6.10, thinness 5.29, strength 6.38.



Figure B.25: *Pour Homme II* by Gucci (fragrance). Average attractiveness rating 5.70, thinness 5.20, strength 4.80.



Figure B.26: *The One* by Dolce & Gabbana (fragrance). Average attractiveness rating 5.95, thinness 5.29, strength 5.95.



Figure B.27: *Nike Pro* by Nike (sportswear). Average attractiveness rating 6.15, thinness 4.45, strength 6.25.



Figure B.28: *Old Spice* (body wash). Average attractiveness rating 4.74, thinness 5.05, strength 6.05.



Figure B.29: *Red Zone* by Old Spice (deodorant). Average attractiveness rating 4.74, thinness 4.16, strength 5.05.



Figure B.30: *Pepsi* by Pepsi (soft drink). Average attractiveness rating 5.68, thinness 4.95, strength 5.47.



Figure B.31: *Speedo* (sportswear). Average attractiveness rating 5.50, thinness 5.00, strength 6.00.



Figure B.32: *Undergear* (beachwear). Average attractiveness rating 5.40, thinness 4.50, strength 6.50.

B.3 TV ads portraying cars

All of the following car advertisements were used in study described in Chapter 3, and their subset in studies described in Chapters 7 and 8. These ads served as a control condition in the above studies as they presented no human models.



Figure B.33: Alfa Romeo *Spider*.



Figure B.34: Audi.

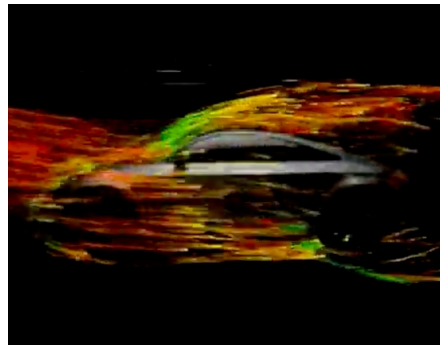


Figure B.35: Audi *TT*.



Figure B.36: BMW (1).



Figure B.37: BMW (2).



Figure B.38: BMW (3).



Figure B.39: Citroën *C4*.



Figure B.40: Honda *Spada*.



Figure B.41: Honda *Element*.



Figure B.42: Mazda *3*.



Figure B.43: Renault *Megane*.



Figure B.44: Nissan *Qashqai*.



Figure B.45: Peugeot *308*.



Figure B.46: Mitsubishi *Eclipse Spyder*.

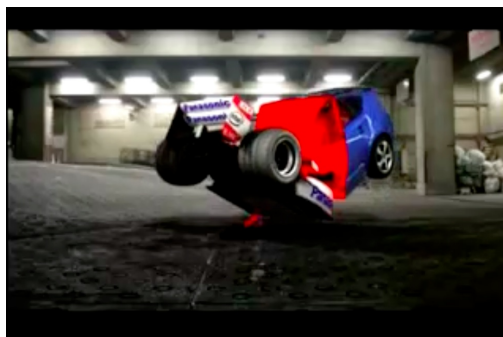


Figure B.47: Toyota *Yaris* (sedan).



Figure B.48: Toyota *Yaris*.

Declaration

I hereby declare, that this dissertation is my own work and I have acknowledged any information or material from the work of others.

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