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# The effect of a "real-world" media intervention on body image

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THE EFFECT OF A "REAL-WORLD" MEDIA INTERVENTION ON BODY IMAGE

by

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Bachelors of Arts (Honours), Saint Mary's University, 2007

A Thesis

presented to Ryerson University

in partial fulfillment of the

requirements for the degree of

Master of Arts

in the program of

Psychology

Toronto, Ontario, Canada, 2009

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# The Effect of a “Real World” Media Intervention on Body Image

Stephanie L. Quigg

Master of Arts in Psychology, 2010, Ryerson University

The present research investigates whether a brief “real world” media intervention – a short television advertisement – can be an effective mitigator of the adverse effects of media portrayals of women on viewers’ body satisfaction. Two hundred female university students (age 17 to 29,  $M = 19.54$ ) were randomly assigned to one of two television conditions (music video or control), one of two commercial conditions (“intervention” or control), and completed self-report measures of television behavior, media influence, body satisfaction and mood. Participants who viewed music videos did not report significantly different levels of body dissatisfaction than participants who viewed control television, although results trended in the hypothesized direction. A significant interaction between program and commercial emerged assessing mood as the outcome variable. Participants who viewed the music videos and were not exposed to the intervention commercial reported significantly lower mood than participants in the other three conditions.

## DEDICATION

To my supportive and loving parents, and everyone who has made this a reality.

## ACKNOWLEDGEMENTS

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## 1. INTRODUCTION

Notions of ideal standards of physical appearance for women are common to many cultures (Etcoff, 1999). However, the particulars of those standards may vary between cultures, and the “perfect” female body promoted by the Western mass media has become problematic. Within the past 40 years the body weight of women appearing in such media has decreased (Seifert, 2005; Sypeck, Gray, Etu, Ahrens, Mosimann & Wiseman, 2006; Wiseman, Gray, Mosimann, & Ahrens, 1992) and the prevailing body shape has changed from a curvy hourglass figure to a thin skeletal figure (Lin & Kulik, 2002). Given that the average Western adult female has actually become heavier over the same period of time (Garner, Garfinkel, Schwartz & Thompson, 1980; Spitzer, Henderson & Zivian, 1999), there is a large discrepancy between ideal media images of women and the average woman (Groesz, Murnen, & Levine, 2002). The media-promoted ideal of female beauty has become unattainable for most women. Media promotion of the “perfect” female suggests that there is a single ideal that women should strive to obtain. This ideal woman portrayed in the media is tall, thin, young, and weighs 15% below the average for women (Johnson, Tobin, & Steinberg, 1989). Genetically the majority of women cannot achieve this unrealistic ideal (Posavac, Posavac, & Weigel, 2001), yet the media promote the idea that these standards are obtainable.

Research has shown that exposure to idealized media images is positively correlated with a desire to be thin (Tiggemann & Pickering, 1996), body dissatisfaction, and disturbed eating among women (Levine, Smolak & Hayden, 1994; Stice, Schupak-Neuberg, Shaw, & Stein, 1994). A causal effect of the media on body dissatisfaction has also been demonstrated in meta-analyses of laboratory studies, in which exposure to media images results in an immediate decrease in body satisfaction (Grabe, Ward & Hyde, 2008; Groesz et al., 2002; Want, 2009).

Recently, researchers have focused on investigating and administering brief, lab-based interventions to counteract the negative effects of idealized media portrayals of women. Such interventions are designed to lead women to question media images as appropriate points of comparison, and have been effective in mitigating adverse media effects (Posavac et al., 2001; Yamamiya, Cash, Melnyk, Posavac & Posavac, 2005; Want, Vickers & Amos, 2009). One currently under-explored area of research regarding work on media interventions, however, concerns the manner in which such interventions are presented. In particular, previous interventions have been constructed and administered to participants by university researchers from psychology departments (Posavac et al., 2001; Yamamiya et al., 2005; Want et al., 2009) who are likely seen as credible sources of information (i.e. as “experts”). Information provided by university researchers in these interventions may have been processed more thoroughly by participants and thus have been more effective than such information would be if delivered via other, perhaps more naturalistic, means. This may be especially true given that participants in existing intervention studies have been asked to pay special attention to the intervention material in order to evaluate or to answer questions later about the stimuli (Posavac et al., 2001; Yamamiya et al., 2005).

At present, the effects of intervention material that is encountered more incidentally, in a format that lends itself to more widespread distribution, have not been investigated. To address the effectiveness of such interventions, this thesis details an investigation into the mitigating potential of material that highlights the unrealistic nature of media images via one of the same mediums through which people are normally exposed to such unrealistic images (i.e. through a television commercial). In doing so, the present study attempted to uncover useful information about whether the effectiveness of media interventions depends crucially on their presentation by

credible university “experts”, or whether a “real world” intervention can counteract adverse media effects on women’s body image.

## 2. LITERATURE REVIEW

### *Body Image*

Research in the area of body image is extensive and multifaceted. The concept of body image has been defined as a multi-dimensional construct referring to how an individual perceives his/her own body (Cash, Melnyk, & Hrabosky, 2004; Farrell, Shafran & Lee, 2006) and is complex, including thoughts, feelings and behaviors related to an individuals' body (Thompson & van den Berg, 2002). The measurement of body image encompasses at least two distinct components; (1) body image evaluations, or the thoughts and feelings an individual has about his/her own physical appearance including self-ideal discrepancies and body satisfaction-dissatisfaction, and body size estimation (Cash et al., 2004; Cash & Szymnanski, 1995), and (2) body image investments including the behaviours engaged in to augment physical features (Cash et al., 2004; Cash & Szymnanski, 1995). One of the most studied aspects of body image evaluations in research on media effects, and the aspect under investigation in the present study, is body dissatisfaction. Body dissatisfaction is defined as the negative evaluation of one's physical features (Posavac et al., 2001), and can be either specific to particular body parts (e.g. the hips, buttocks, thighs) or an overall negative evaluation of one's body as a whole (Bessenoff, 2006).

Body dissatisfaction is prevalent among women in Western society, with approximately half indicating some degree of dissatisfaction (Etcoff, Orbach, Scott, & D'Agostino, 2004). Some authors have argued that body image dissatisfaction among women in Western societies is so widespread as to be a form of "normative discontent," (Rodin, Silberstein, Striegel-Moore, 1985). This term "normative discontent" indicates that this dissatisfaction that women are contending with is so prevalent in society that it is now considered normal; women may not be

completely dissatisfied with their bodies however it is now regarded as standard for women to hold a certain amount of dissatisfaction with their body (Farrell, Shafan, & Lee, 2006). A study which surveyed 3200 women about their views of beauty across ten countries (U.S., Canada, Great Britain, Italy, France, Portugal, Netherlands, Brazil, Argentina, and Japan) illustrates the extent of women's body dissatisfaction (Etcoff et al., 2004). Etcoff et al. (2004) found that almost half of the women they surveyed rated their body weight as "too high" and around 25% of these women reported that they were contemplating cosmetic surgery. Similarly, Champion and Furnham (1999) reported that 76% of adolescent girls between the ages of 12 and 16 described themselves as slightly overweight or obese, whereas in reality (according to health statistics) only 32% of participants actually fell into that category. The body shape preferences of these adolescent girls were such that over half indicated a preference for a thinner body shape than the average body shape for females their age (Champion & Furnham, 1999). A Canadian survey of 19,841 men and women aged 18 to 74 years indicated that women were more likely than men to be attempting to lose weight (Green, Cameron, Polivy, Cooper, Liu, Leiter, & Heatherton, 1997). Of the women whose weight was in the "normal range" (according to official Canadian health guidelines) 37% indicated that they were attempting to lose weight. Additionally, 8% of women categorized as underweight indicated that they were attempting to lose weight (Green et al., 1997). Therefore, the problems that women face with regard to body image are not solely with thoughts and feelings, but also with the behaviours they engage in to mitigate that dissatisfaction.

One of the most detrimental behaviours engaged in by individuals who experience body dissatisfaction is severe dieting (Strauman, Vookles, Berenstein, Chaiken, & Higgins, 1991). McVey, Tweed, and Blackmore (2004) surveyed 2279 young girls aged 10–14 years old in

Ontario and revealed that 29.3% of the girls stated that they were currently trying to lose weight and 10.5% of the girls reported disordered eating behaviors (such as vomiting and binge eating). However, severe dieting is not the only consequence of body dissatisfaction, other risks include lower self-esteem, and decreased psychological well being including depressed mood and depression (Dittmar, 2005; Dohnt & Tiggemann, 2006; Polivy & Herman, 2002; Thompson, Heinberg, Altabe & Tantleff-Dunn, 1999). These are major problems which are associated with body dissatisfaction, and therefore the reasons behind women's body dissatisfaction need to be assessed. Research has indicated that one contributing factor to women's body dissatisfaction may be the media's portrayal of idealized yet unrealistic images of women.

#### *Effects of Media on Body Image*

It has been claimed that the mass media are the most powerful conveyors of thin ideals of women's body shape and size (Tiggemann & Slater, 2004) and that television, magazines and movies help create and reinforce ideal standards of beauty and provide increased pressure to conform to these standards (Martin & Gentry, 1997). Many studies have supported the connection between the media and body dissatisfaction in women.

Irving (1990) indicates that women perceive the media as the main source promoting the "thin-ideal" for women. The media relay the message that women who are beautiful, successful, and healthy are tall and thin, whereas being fat is associated with many negative attributes, such as lethargy, self-indulgence, and lack of control (Robinson, Bacon, & O'Reilly, 1993; Tiggemann & Rothblum, 1988). People who are overweight are also viewed as being less intelligent, less successful and less popular than people of average weight (Harris, Harris, & Bochner, 1982). Furthermore, women hold these negative attitudes to a greater degree than men (Crandall & Biernat, 1990).

Content analyses investigating preoccupation with thinness and representations of body shapes and sizes have demonstrated that the media promotes standards of body attractiveness that are unrealistic for most women (Fouts & Burggraf, 1999; Silverstein, Perdue, Peterson, & Kelly, 1986). The reality is that many women can not obtain a figure conforming to the media ideal because of genetic predispositions to be a certain size and height (Posavac et al., 2001); less than 5 percent of women can achieve the thin form of a model (Grogan, 2008).

Myers and Biocca (1992) indicate that women with even minimal exposure to television (30 minutes a day) depicting idealized images of female beauty report detrimental effects. Correlational research reports that the amount of time spent watching television soap operas and movies is associated with greater body dissatisfaction (Tiggemann & Pickering, 1996), that the amount of time spent watching music videos is associated positively with desires for thinness (Tiggemann & Slater, 2004), and that exposure to thin ideal media within magazines is associated with distorted eating among women (Harrison & Cantor, 1997). Research also indicates that female adolescents who report that fashion magazines are an important source of information on beauty and fitness have a higher likelihood of engaging in weight management behaviors, both positive, such as exercise, and negative, such as skipping meals, as compared to adolescents who do not consider magazines to contain useful information (Levine et al., 1994). Perhaps as a long-term result, women exposed to media containing a high proportion of idealized body images, and engage in negative weight-management behaviors are at greater risk of developing anorexic and bulimic behaviors (Stice et al., 1994).

A meta-analysis conducted by Groesz et al. (2002) of 25 experimental studies including results from 2292 female participants revealed that the influence of the mass media is most detrimental when women are exposed to thin female models as compared to any other type of

media image. Studies in this meta-analysis presented media stimuli which ranged from slides to videos and television commercials. All studies included a control comparison (average models, attractive non-models, overweight models, or objects, cars, or houses), and assessed body dissatisfaction or self-perceived physical attractiveness as the dependent variable. The results indicated that exposure to media images of thin female models generally had small, but significant detrimental effects on women's satisfaction with their bodies. In addition, presentation of such images had a significantly greater impact on women with pre-existing body dissatisfaction issues than on women without pre-existing body dissatisfaction issues. There was also a significant effect regarding the age of the women in the studies, with women under 19 being more adversely affected by exposure to thin media stimuli than women 19 and over.

A recent meta-analysis by Grabe et al. (2008) further supports the notion that exposure to thin-ideal images displayed in the media is associated with body dissatisfaction in women. This meta-analysis included a large sample of 77 experimental and correlational studies, including unpublished studies, and grouped outcome measures into four categories (body dissatisfaction, body self-consciousness/objectification, internalization of the thin-ideal/drive for thinness, and eating behaviours/beliefs). The analysis revealed effect sizes representing small to moderate effects using Cohen's (1988) criteria,  $d = -0.28$  to  $-0.39$ , for the four outcome categories. This meta-analysis provides increased support for the claim that viewing media images of thin models can detrimentally affect women's body satisfaction, and the inclusion of correlational studies in the analysis suggests that the findings apply not just in experimental settings, but outside the laboratory as well.

Several moderator variables have been found to affect the strength of the relationship between exposure to thin ideal media images and detrimental effects on women's body

satisfaction. Groesz et al. (2002) suggests that of the many moderators that have been examined, the two most prominent are pre-existing body dissatisfaction and thin ideal internalization. Prior research has demonstrated that pre-existing or trait appearance dissatisfaction moderates the influence of media images on women, such that women who display initial body dissatisfaction are more vulnerable to the influence of such images than women who are initially relatively more satisfied with their appearance (Bessenoff, 2006; Groesz et al., 2002; Heinberg & Thompson, 1995; Posavac et al., 1998). With regards to thin ideal internalization, women who internalize the thin ideal standards presented in the media view such images as personal appearance standards (Cusumano & Thompson; Heinberg & Thompson, 1995; Stice, Schupak-Neuberg, Shaw, & Stein, 1994; Stice & Shaw, 1994; Thompson, Heiberg, Altobe, & Tantleff-Dunn, 1999; Yamamiya et al., 2005). Halliwell and Dittmar (2005) report that exposure to ideal media images results in body dissatisfaction only among women who internalize the thin ideal to a high degree.

Therefore, research investigating body image suggests that when thin media ideals are viewed, negative outcomes result, ranging from body dissatisfaction to the potential for disordered eating behaviors (Farrell, et al., 2006; Hawkins, Richards, Granley, & Stein, 2004). Furthermore, these media representations of ideal beauty may be particularly harmful to younger women, those with existing body image concerns and individuals who internalize the appearance ideals projected by the media.

The idealized images represented in the media vary for men and women. Men in the media are athletic and muscular (Cash & Brown, 1987; Murray, Touyz, & Beumont, 1996) whereas women in the media are depicted as having “flawless skin, a thin waist, long legs, and well-developed breasts”, essentially a thin ideal (Groesz et al., 2002, p.2). Men and women

therefore have different appearance standards and engage in different compensatory behaviours to obtain the idealized standards of appearance displayed in the media, such as steroid use for men and vomiting and the use of diet pills or laxatives for women (Morrison, Kalin & Morrison, 2004). Women compared to men also have a higher incidence of body dissatisfaction and detrimental eating behaviors (van Hoeken, Lucas, Hoek, 1998). Considering the different impact of the media on men and women, that women are more likely to engage in dieting behaviors, and that the majority of women report at least some degree of body dissatisfaction, the focus of the literature review and investigation will be limited exclusively to women.

#### *How Do Media Images Affect Body Dissatisfaction? Social Comparison Theory*

The theory most commonly used by researchers to explain why women are susceptible to these media effects is Festinger's (1954) Social Comparison theory. According to this theory, in domains which we cannot easily identify objective criteria for success or ability by ourselves, we seek to compare ourselves with others to determine our own levels of achievement.

“Attractiveness” is thought to be one domain in which independent assessment of the self is not available; that is, “attractiveness” is inherently relative to other people. In this theory, “upward” social comparison involves comparing oneself to others who are perceived as socially better or more desirable than oneself, and often results in negative affect. On the other hand, “downward” social comparison involves perceiving oneself as socially better or more desirable than the comparison person, often resulting in positive affect. Given that the dominant media image of women in Western culture is exceptionally thin and attractive, the average woman is likely to engage in upward social comparison when viewing these images (Engeln-Maddox, 2005; Tiggemann & McGill, 2004).

This theory is supported by research which indicates that girls do use media images of women as targets for social comparison (Irving, 1990; Morrison et al., 2004). When women are encouraged to engage in social comparison with models during media exposure, increased weight concerns and body image dissatisfaction can result (Tiggemann & McGill, 2004). Additionally, research investigating the social comparison of girls aged 9 through 14 with media ideals indicates that, when explicitly instructed to compare their own physical attractiveness to that of models in media ads, the girls immediately felt less attractive than girls who did not compare themselves to the models in the advertisements (Martin & Gentry, 1997). Further, in-depth interviews conducted by Milkie (1999) with girls ages 14-16 reveal that even when young girls are aware and critically evaluate the notions of idealistic beauty set forth by the media they are not deterred from reading magazines that promote these standards of beauty and their resulting enjoyment does not decrease. Instead they indicated the main reason for engaging in this medium was for social comparison (Milkie, 1999). Therefore, these idealistic images produced by the media are regarded by adolescents as appropriate representations for comparison.

#### *Enhancing benefits of media exposure*

Although the majority of literature supports the idea that thin media images have a detrimental influence on women's body satisfaction, some research suggests that there may be self-enhancing benefits of exposure to thin media images for some individuals (Henderson-King & Henderson-King, 1997; Joshi et al., 2004; Mills et al., 2002; Wheeler & Miyake, 1992; Wilcox & Laird, 2000). Furthermore, research reports that when some methodological aspects of studies investigating the influence of thin ideal images on women are controlled for, obtaining positive benefits from exposure to ideal images is more likely (Mills et al., 2002).

Wheeler and Miyake (1992) report that some women may achieve positive benefits when engaging in upward social comparison acts as a motivating agent to achieve the social standards of appearance. These positive benefits depend on the perception of weight control held by the individual; individuals with no perceived control have resulting negative affect, whereas perceptions of control result in self-improvement (Major, Testa, Bylsma, 1991). Furthermore, these positive benefits are reported for only certain individuals, specifically restrained eaters. Mills et al. (2002) report that restrained eaters gain positive benefits, such as viewing their body size as smaller and having higher appearance self-esteem, after viewing thin media images than after viewing plus-size images. However, negative effects for restrained eaters also resulted from viewing thin ideal images, with restrained eaters engaging in disinhibited eating, where they consume more food after viewing thin ideal images than plus-size images (Mills et al., 2002). Joshi et al. (2004) further reports benefits of thin images for restrained eaters. Restrained eaters exposed to thin media images reported greater social state self esteem and higher positive self image than restrained eaters exposed to control images. However, non-restrained eaters were not significantly influenced by exposure to either thin media images or control images.

This positive effect has been explained as the result of a "thin fantasy", with women having short term elevations in mood, and gaining thinner perceptions in body size estimation by engaging in fantasies of obtaining their ideal figure (Joshi et al., 2004; Mills et al., 2002; Myers & Biocca, 1992). Dieters may be more likely to engage in this "thin fantasy" with weight and shape being personally relevant and perceptions of their ideal image seen as obtainable by restricting their food intake (Mills et al., 2002). Restrained eaters are reported to have overall lower state social and appearance self esteem, view themselves more negatively and report a worse self image than unrestrained eaters (Joshi et al., 2004). Therefore, it is not surprising that

thin ideal images may act as a motivating agent to achieve the social standards of appearance for certain individuals whose appearance is more closely associated to their self image. Furthermore, images that produce positive benefits started to be perceived as slightly better physically and women comment that they are able to obtain that size, whereas a large discrepancy between individual's physical appearance and media images do not result in positive benefits (Collins, 1996; Myers & Biocca, 1992).

Mills et al. (2002) contend that detrimental effects of media images on women's body satisfaction may typically be found because there is a general consensus that thin media images are detrimental to self esteem and appearance satisfaction, and so studies investigating body satisfaction in response to media images may encounter "demand" effects, whereby participants report what the researchers expect to find. Mills et al. (2002) further contend that research can counteract this negative response tendency by employing less obvious self report questions when presenting thin images, which then results in a greater likelihood of finding self-enhancing and beneficial responses.

#### *Interventions for the Effects of Media Images on Body Image*

Research has indicated that interventions that discourage women from engaging in social comparison with media images by leading women to question the appropriateness of media representations of women as beauty comparators are effective in mitigating adverse media effects on women's body image (Posavac et al., 2001). Three interventions which exclusively focused on reducing body dissatisfaction in reaction to media images by reducing social comparisons to such images are those of Posavac et al. (2001), Yamamiya et al. (2005) and Want et al. (2009).

Posavac and colleagues (2001) assessed female undergraduate students aged 18-25 who were pre-screened on the body dissatisfaction subscale of The Eating Disorder Inventory (EDI-2; Garner, 1991) to demonstrate that they experienced pre-existing body image dissatisfaction. The final sample of 125 participants with moderate to high levels of body dissatisfaction were randomly assigned to one of three experimental interventions, each consisting of a seven-minute video tape about the nature of media images of women, or to a control condition in which a "parenting skills" message was presented. The three experimental interventions were "Artificial Beauty" (which discussed the fact that media images are inappropriate targets for comparisons because models' beauty is artificially constructed by professional makeup, lighting, hair stylists, airbrushing etc); "Genetic Realities" (which pointed out that the majority of women are predisposed genetically to be heavier than most models), and a combination (3.5 min of each previous intervention). Participants then viewed either 20 idealized media images (thin and beautiful models) or neutral images (automobiles) and were assessed on three measures: the Weight Concern subscale of the Body Esteem Scale (Franzoi & Shields, 1984), Negative-Self statements and Drive for Thinness statements derived from free response listings by participants. Results indicated that participants who received the control intervention and viewed the media images were significantly more likely to report Weight Concerns, and more likely to make Negative-Self and Drive for Thinness statements than control participants who viewed the neutral images. However, of the participants who viewed the media images, those assigned to intervention conditions reported significantly less Weight Concern and were less likely to make Negative-Self and Drive for Thinness statements than participants in the control intervention.

These interventions may be successful because they lead women to question the artificial nature of the media's representation of women and beauty, and suggest that fashion models are

dissimilar others and therefore inappropriate for social comparison. Yamamiya and colleagues (2005) replicated these findings in a sample of women who were not pre-selected for existing body image concerns and instead were evaluated on internalization of idealized media. The results indicate that women who see media images as representing the ideal for women (high-internalization women) expressed significantly more negative evaluations of their own physical appearance and worse mood after viewing media ideal images than women exposed to control images. Importantly however, these adverse effects on body image and mood states were effectively prevented by the interventions, when presented prior to media exposure. This literature on body image provides support for the notion that women with high internalization levels are influenced by media images and that media intervention may reduce these adverse effects.

Additionally, Want et al. (2009) recently reported success in mitigating the detrimental effects of viewing a television program that contained thin and attractive female characters, by using a similar short intervention that persuaded viewers not to compare themselves to women appearing on television. This intervention study expanded the literature by exploring whether or not two intervention scripts, one focused on the ways in which the general appearance of people appearing in the media is manipulated and one focused on similar concerns specific to weight, could effectively reduce the detrimental influence of television programs (specifically a television situation comedy) rather than magazine images (as used in both previous interventions). Participants were exposed to 10 minutes of the experimental stimulus after reading the intervention material and then completed the main dependent measures assessing appearance satisfaction. The results indicated that women exposed to a television program that depicts women adhering to thin ideal standards are less satisfied with their appearance than

women assigned to a control group who are not exposed to the program *and* that intervention material presented prior to exposure helps to mitigate this detrimental effect.

#### *The Extension of Existing Media Interventions*

Although existing interventions provide a means of decreasing the influence of the media on women's body image, they may be usefully extended in two related aspects: their distribution and presentation. Given that it has been proposed that body dissatisfaction is widespread among women in Western societies – indeed, that it may even be a form of normative discontent – one goal of body image interventions ought to be to reach as wide an audience as possible. Existing experimental media interventions, in their current form [7-minute videotapes in Posavac et al., (2001) and 7-minute audiotapes in Yamamiya et al., (2005)], have somewhat limited potential for mass distribution. Although 7-minutes is not a long time in the context of a psychology study, or a clinical intervention for eating disorders, given the widespread nature of body dissatisfaction among women, it would be beneficial to have a shorter intervention that is as effective as these 7-minute-long interventions and that might be delivered to large audiences outside the psychology laboratory or clinic.

On a related note, existing interventions have been administered to participants by university researchers from psychology departments (Posavac et al., 2001; Yamamiya et al., 2005; Want et al., 2009) who are likely to be seen as experts in their area of research. Therefore the information provided in these interventions may have been processed in a deeper and more thorough way by the participants in the studies, and thus may have been more effective, than such information would be if conveyed by more everyday “naturalistic” means.

It has been further suggested that previous experimental research is limited by the means in which the experimental stimuli are presented (Hargreaves & Tiggemann, 2003). Experimental

presentation of media stimuli, such as thin media images in music videos, are provided to participants in short clips and this varies greatly from everyday television viewing which occurs with programs and commercials interspersed. Previous research further promotes an artificial television viewing atmosphere by provide participants with instructions as to how to process the stimuli. Research has instructed participants to assess media images in manners ranging from comparing themselves to the stimuli (Tiggemann & Slater, 2004) to focusing on the products presented in the stimuli (Cattarin et al., 2000). Cattarin et al. (2000) and Tiggemann and Slater (2004) both report that instructions provided to participants influence the level of comparison between oneself and viewed models. Therefore, research is not assessing the real world influence of these media images; instead it is investigating the media's impact through artificial viewing behavior.

Research studies may further prompt unrealistic television viewing behavior by assessing individual body satisfaction prior to the experimental exposure to thin media images (Mills et al., 2002). Hamilton, Mintz and Kashubeck-West (2007) suggest that asking participants questions about body image prior to exposure to media images may sensitize them to the purpose of the study. This poses a problem when attempting to determine the influence of media images on body image satisfaction. If participants are aware of the area of investigation then demand or expectancy effects can influence the results:

Whether or not the effectiveness of existing intervention material can be replicated when it is provided in different contexts remains an open question. In particular, if reaching as wide an audience as possible is the goal, then it would be useful to investigate whether these media interventions that convey the highly unrealistic nature of media images retain their effectiveness when presented through a widespread, everyday medium, such as television.

### 3. STUDY

The "Dove Campaign for Real Beauty", presented by Unilever Inc. provides an opportunity to investigate the effectiveness of a real world media intervention. A television commercial (called "Evolution") created by the company presents seventy-five seconds of time-lapsed footage of the transformation that a model undergoes before being photographed, and of the digital modifications the pictures undergo before being presented to society (Postrel, 2007). The aim and objective of these commercials is similar to that of the interventions used in psychological studies. The commercial aims to expose the unreal nature of most media images of women and to discourage viewers from engaging in social comparison with idealized media images. Therefore, the commercial presents a good opportunity for investigators to explore the effectiveness of a widely-distributed (and brief) form of media intervention to act as a mitigator of the adverse effects of thin ideal and artificially-manufactured media presentations of women. This research will provide valuable information as to the effectiveness of "real world" media interventions as an adjunct to the presentation of such interventions by credible university experts. Furthermore, if these real world interventions provide a means of decreasing media influence on women's body image, dissemination to a great number of women who might otherwise be detrimentally affected by media images will be possible.

#### *Research Design*

The present study consists of a between-subjects, 2 (commercial: intervention vs. control) x 2 (type of media image: music video vs. control documentary) factorial design. The dependent variables consist of satisfaction with overall appearance, weight and body shape, and facial appearance.

In short, participants were exposed to one of two different television programs. One of the television programs (a series of music videos) contained thin and attractive media images, while the other (a documentary – Planet Earth) acted as a control condition and did not contain any images of people. Participants also viewed either the “intervention” commercial (“Evolution”) or control commercials featuring no people within the television sequence. Levels of current state body satisfaction among the participants were then assessed using Visual Analogue Scale (VAS) measures. Two standardized measures, the Sociocultural Attitudes to Appearance Questionnaire (SATAQ-3; Thompson, van den Burg, Roehrig, Guardia & Heinberg, 2004) and the Body Esteem Scale (BES; Franzoi & Shields, 1984) were used as potential moderators. The SATAQ-3 was administered as a means of evaluating the extent to which women have internalized the thin-ideal presented in the media. The second measure, the Body Esteem Scale (BES; Franzoi & Shields, 1984), assessed participants’ long-term, trait (not state), evaluation of their own appearance.

### *Hypotheses*

The first hypothesis is that the “thin-ideal” television programs (the music videos) will be detrimental to participants satisfaction with their appearance, such that;

H1: Among participants who do not see the “intervention” commercial, those who view the “thin-ideal” television programs (music videos) will demonstrate significantly higher levels of state body dissatisfaction than those who view the control (documentary) program.

The second hypothesis is that this detrimental effect will be moderated by participants’ level of internalization of the thin-ideal, such that;

H2: Among participants who do not see the intervention commercial, those who score above the mid-point on the SATAQ-3 (i.e. those who are relatively more committed to prevailing

socio-cultural attitudes to appearance) will have significantly higher levels of state body dissatisfaction in response to the music videos than those who score below the mid-point of the SATAQ-3.

The third hypothesis is that the detrimental effect of media images will also be moderated by participants’ levels of pre-existing body dissatisfaction, such that;

H3: Among participants who do not see the intervention commercial, those who score below the mid-point on the BES (i.e. those who have relatively lower long-term, trait body satisfaction) will have significantly higher levels of state body dissatisfaction in response to the music videos than those who score above the mid-point of the BES.

Finally, it is hypothesized that the intervention commercial will successfully mitigate at least some of the detrimental effect of the thin-ideal programs, such that;

H4: Among participants who view the music videos, those who do not view the intervention commercial will have significantly higher levels of state body dissatisfaction than those who do view the intervention commercial.

#### 4. METHOD

##### *Participants*

For the present study, a total of 229 female undergraduate students between the ages of 17 and 29 years attending Ryerson University were recruited from introductory psychology courses and received partial course credit for participating. Participants were provided with information about the study and were recruited through the psychology research participation system, Sona Systems Ltd. (See Appendix A). Ryerson Ethics Board granted approval for all procedures conducted as well all participants provided written consent (See Appendix B) and were fully debriefed (See Appendix C). Data screening procedures were conducted with the initial raw data of 229 participants. Data from respondents who were 30 years of age or older ( $n=11$ ), who did not self-report weight ( $n=10$ ), or who were otherwise missing data ( $n=8$ ) were excluded from main analyses. A total of 29 participants were thus excluded based on the screening criteria, resulting in a final data set consisting of 200 participants with 50 in each condition. The average age of the participants was 19.54 years ( $SD= 2.33$ ), the mean weight was 129.46 lbs. ( $SD= 24.74$ ), mean height was 64.58 in. ( $SD= 2.97$ ), and the mean body mass index (BMI) was 21.76 ( $SD= 3.50$ ).

Participants self-reported ethnicity was evaluated using the Canadian census categories: White/Caucasian, Chinese, South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc), Black/African American, Filipino, Latin American, Southeast Asian (e.g., Vietnamese, Cambodian, Malaysian, Laotian, etc), Arab, West Asian (Iranian, Afghan, etc), Korean, Japanese, Aboriginal (e.g., North American Indian, Métis, Inuit, etc), and Other. Of the 200 participants, 80 identified their ethnic origin as White/Caucasian (40%), 23 identified themselves as Chinese (11.5%), 30 as South Asian (15%), 15 as Black/African American (7.5%), 11 as Filipino (5.5%), 3 as Latin

American (1.5%), 2 as Arab (1%), 1 West Asian (0.5%), 5 as Korean (2.5%), 1 as Japanese (0.5%) and 3 as other (1.5%) (Russian, East African, Italian).

Another 24 participants identified themselves as multiracial (12.5%). Of these 24 participants, 16 identified themselves as White/Caucasian and another ethnicity: Chinese (1), South Asian (1), Black/African American (3), Filipino (2), Latin American (1), Arab (1), Aboriginal (1), and Other (6) (Halian, Polish, Ukrainian, Romanian, Italian); 6 identified themselves as Chinese and another ethnicity: South Asian (2), Filipino (1), Southeast Asian (2), and Aboriginal (1); and 2 identified themselves as Arab and another ethnicity: Black/African American (1) and Latin American (1).

### *Materials*

*Videos.* Four DVDs with a running time of approximately 20 min were produced for this study, each of which included 17 min of a television show (Music Videos, or Documentary) and about 3.5 min of commercials (intervention or control) embedded in the viewing time. The videos were displayed to participants using a projector, DVD player and speaker. Participants were seated 6 ft from the screen which was 4.5 ft by 3.5ft.

The music videos were chosen according to three criteria; popularity, presence of women fitting the thin ideal, and recency. First, popularity indicated a ranking in the top 20 music videos on the popular Canadian show Much Music Countdown. Second, the music video contained one woman or more than one woman fitting the thin ideal for a minimum of half the viewing time. Third, recency indicated that the music video was released in 2007 or 2008. The music videos were pre-rated by a sample of 10 graduate students, ( $M= 23.10$  years,  $SD = .88$ ), to ensure that the chosen music videos contained images of women that were considered to fit the thin and attractive media ideal. In particular, the women in the programs were rated on a seven-point

scale for attractiveness and thinness (ranging from “Not at all” to “extremely”) (See Appendix D). The mean attractiveness for the images ranged from 4.50 to 6.30 and the thinness of the images ranged from 5.50 to 6.30 (See Appendix E). To reduce the probability of participants guessing the hypotheses of the study, the focus on the women in the videos was reduced by having 3 music videos with female lead singers and 2 with male lead singers containing either female backup singers or dancers/actors appearing in over half of the viewing time. Additionally, the music videos did not consist solely of media images of White musicians, with 2 music videos containing African American female singers. The 5 music videos with a total running time of 17:08 min included: Keri Hilson- Energy (3:23 min), Lady Gaga- Just Dance (4:04 min), Timberland-Scream (3:49 min), Kate Perry- I Kissed A Girl (3:04 min), and New Kids On The Block- Summertime (3:28 min). The overall enjoyment of the music videos was assessed on a seven-point scale (ranging from “Not at all” to “extremely”), revealing scores ranging from 1 to 6 ( $M=4.5$ ,  $SD=1.72$ ) (See Appendix F).

The control television program was a segment of a wildlife documentary (“Planet Earth”) that featured no images of people and had a total running time of 16.79 min. This control program featuring no people was used because previous research has sometimes found that the use of control images of overweight or average-weight women causes viewers to feel more satisfied with their appearance, compared to viewing nothing (Irving, 1990). Thus, using overweight or average-weight women as control images confounds the potentially negative effect of viewing images of thin women with the potentially positive effect of viewing images of average or over-weight women.

Four commercials were embedded in the 20 min viewing sequence for both the control and intervention conditions. The control commercial condition involved four commercials which

do not feature any people, and included: K9-Advantix ad (30 sec), 2008 Honda Accord Sedan ad (30 sec), Telus 2006 Fish Talk To You ad (30 sec), and the Sony Bravia Paint Remastered ad (130 sec). Total running time for the control commercial condition was 220 sec. These commercials were obtained from a video sharing website located at <http://www.youtube.com>. The intervention commercial condition involved 3 of the commercials from the control condition (K9-Advantix ad, 2008 Honda Accord Sedan ad, and Telus 2006 Fish Talk To You ad), with the addition of the intervention Dove "Evolution" commercial (116 sec) in place of the Sony Bravia ad. The total running time for the intervention commercial condition was 206 sec.

The enjoyment of each of the commercials was also pre-rated on a seven-point scale (ranging from "Not at all" to "extremely"). The mean enjoyment of the commercials ranged from 3.6 to 6.7 (See Appendix F). Comparing the intervention commercial (Dove Evolution Ad) to the control commercial (Sony Bravia Ad) indicated that the intervention commercial ( $M=6.8$ ,  $SD = .63$ ) received a higher mean enjoyment rating than the control commercial ( $M=4.9$ ,  $SD=1.20$ ). Considering the variation between the enjoyment of the intervention and control commercial the participants in the study were also assessed on their enjoyment of the program they viewed (Music Videos or Planet Earth) and their overall enjoyment of the commercials.

### *Measures*

*Visual Analogue Scales.* Participants completed a self-report questionnaire containing a number of Visual Analog Scales (VAS) to measure state body satisfaction and mood. VAS are comprised of 100mm horizontal lines with anchored endpoints which participants mark with a vertical line to indicate their response (Heinburg & Thompson, 1995). Scoring of participants responses is done to the nearest millimeter and range from 0 to 100. VAS measures allow for a greater range of responses than 1-7 Likert scales and have been frequently used in this type of

research (van den Berg & Thompson, 2007). In the present study, participants indicated their mood with answers to "right now I feel", ranging from "worried" to "relaxed". They also rated "right now" how they feel about their "facial appearance", "weight and shape" and "overall appearance" (ranging from extremely dissatisfied/unhappy to extremely satisfied/happy) with higher ratings indicating better satisfaction and mood (Heinburg & Thompson, 1995). These three questions formed the key dependent measures in the present study and relate to participants' feelings of satisfaction with their appearance. The convergent validity of this measure has been examined through comparison with longer measures of appearance satisfaction/dissatisfaction such as the Eating Disorders Inventory-Body Dissatisfaction subscale (EDI-BD; Garner, 1991) and results indicate these two measures (VAS appearance satisfaction and the EDI-BD) are significantly correlated (Garner, Olmstead & Polivy, 1983; Heinberg & Thompson, 1995).

Other VAS items included rating participants' perceptions of the reality of the program, with questions such as, "I thought the people in the music videos were", with answers ranging from "not at all true-to-life" to "very true-to-life", and describing their personality with questions such as "generally, I come across as", ranging in their answers from "someone who is sensitive and excitable and can be tense" to "someone who is relaxed, unemotional, rarely gets irritated and seldom feels blue" from the Single-Item Measure of Personality (SIMP; Woods & Hampson, 2005).

The implementation of a short measure of body satisfaction (just three VAS questions) among the other VAS items helped to facilitate the cover story for this study (see below) and reduce the likelihood of participants discovering its true purpose. Participants becoming aware of the true purpose of the study may result in expectancy effects.

*Television Viewing Behaviors.* Participant's television exposure was assessed with three free response questions, "Which are your top 3 favorite TV shows?", "Which television shows do you watch faithfully every week" and "Number of episodes of this show you watch every week". Viewing behavior of specific shows and genres was assessed with self report items assessing the amount and frequency of viewing of 32 Nelson top-rated programs. These viewing behavior questions appeared after the VAS items on the questionnaire.

*Demographic variables.* Participant's age, gender, height, weight, and ethnicity were also assessed with five free response questions appearing after the television viewing behavior questions. Information obtained for self-reported height and weight was used to calculate BMI ( $\text{kg}/\text{m}^2$ ).

*Awareness of Hypotheses.* Further actions were taken to assess the extent to which participants were aware of the hypothesis of the study. Before administration of the Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3) and the Body Esteem Scale (BES) participants were asked to provide a description of what they believed the study was investigating (i.e. the hypotheses). These descriptions were scored by an independent rater, who indicated if the participant was aware of the study's true hypothesis. Participant's responses were coded into one of two categories, (1) mentioned media influence but did not mention body image or appearance satisfaction, or (2) mentioned media influence and mentioned body image or appearance.

Examples of participants' responses falling into categories (1) and (2):

- (1) How your personality dictates what you watch on TV.
- (2) The effects of physical appearance portrayed in the media on self-perception/feelings of physical appearance of viewers.

The VAS scales, television viewing behavior questions, demographics and awareness of hypotheses measures were all compiled into one Study Questionnaire when administering to participants (See Appendix G).

*Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3).* Participants were assessed with Thompson et al.'s (2004) measure of the degree of internalization and awareness of the thin ideal typically seen in mainstream media, the SATAQ-3 (See Appendix H) an updated version of the Heinberg, Thompson, & Storer (1995) SATAQ scale. Thin-ideal internalization is defined as the level at which an individual endorses, both cognitively and behaviorally, the ideals of attractiveness set out by society (Heinberg & Thompson, 1995; Heinberg et al, 1995; Thompson & Heinberg, 1999). Research suggests that internalization of societal ideals is likely multidimensional, consisting of a multitude of constructs such as media pressure and information from the media (Thompson et al., 2004). Responses on this measure range from "definitely disagree" to "definitely agree") and higher scores represent greater internalization of the thin ideal. The SATAQ-3 is composed of four subscales of media influence (General, Information, Pressure, and Athlete) with a total of 30 items. The General subscale is an overall measure of the internalization of socio-cultural standards of attractiveness. The Pressure subscale is a measure of the amount of pressure a person feels from the media to adhere to those standards of attractiveness. The Information subscale is a measure of the importance a person attaches to the media as a source of information about standards of attractiveness. Finally, the Athlete subscale assesses one's focus on athleticism and sports as important to standards of attractiveness. The scale is comprised of statements such as "I wish I looked like the models in music videos" (General subscale), "I've felt pressure from TV and magazines to be thin" (Pressure subscale), "TV programs are an important source of information about fashion and being

attractive” (Information subscale) and “I try to look like sports athletes” (Athlete subscale). The participants respond using a 5-point Likert scale with 1 indicating that they completely disagree to 5 indicating that they completely agree. Thompson and colleagues (2004) evaluated the psychometric status of the SATAQ-3, reporting high internal consistency (Cronbach’s alpha) of the subscales over two studies (General- 0.96 and 0.92, Information- 0.96 and 0.94, Pressure- 0.92 and 0.94 and Athlete- 0.95 and 0.89) and excellent convergent validity demonstrated by correlations with body image and eating disturbance measures. The SATAQ-3 was calculated into 4 subscales: The ‘General’ subscale has scores ranging from 9 to 45 (9 Items: 3, 4, 7, 8, 11, 12, 15, 16, 27), the ‘Athlete’ subscale has scores ranging from 5 to 25 (5 Items: 19, 20, 23, 24, 30), the ‘Pressure’ subscale has scores ranging from 7 to 35 (7 Items: 2, 6, 10, 14, 18, 22, 26) and the ‘Information’ subscale has scores ranging from 9 to 45 (9 Items: 1, 5, 9, 13, 17, 21, 25, 28, 29). This measure included 8 reverse items (3, 6, 9, 12, 13, 19, 27, and 28) and was scored in accordance with Thompson et al. (2004).

Thompson et al. (2004) reports that the Pressure subscale of the SATAQ-3 has greater predictive ability for body disturbance than any of the other three subscales. Yamamiya et al (2005) used the General subscale in their investigation of interventions for reducing the impact of media on women’s body image. Therefore, considering the greater predictive ability of the Pressure subscale and the use of General subscale in previous intervention research, the Pressure and General subscales will be used as moderator variables in the present study.

*Body Esteem Scale (BES)* (Franzoi & Shields, 1984). Participant’s trait body satisfaction was measured with the BES is a 35-item scale which assesses an individual’s feelings about various aspects of their appearance (ranging from “strong negative feelings” to “strong positive feelings”) (See Appendix I). Higher scores represent more trait body satisfaction. For women,

the BES includes three subscales: Sexual Attractiveness (feelings about body areas such as the eyes, cheekbones, and breasts), Weight Concern (feelings about body areas such as the waist, thighs, and hips), and Physical Condition (feelings about the body’s capabilities, such as its strength, stamina, and reflexes). Because the focus of the present study is on evaluation and satisfaction with appearance, only the Sexual Attractiveness and Weight Concern subscales were administered. The BES was calculated into two subscales; the ‘Sexual Attractiveness’ subscale has scores ranging from 13 to 65 (13 Items: body scent, nose, lips, ears, chin, chest or breast, eyes, cheeks, sex drive, sex organs, sex activities, body hair and face), and the ‘Weight Concern’ subscale has scores ranging from 10 to 50 (10 Items: appetite, waist, thighs, body build, buttocks, hips, legs, figure, stomach and weight) in accordance with Franzoi and Shields (1984).

Cronbach’s alphas have been reported as ranging from .78 to .87 which provides evidence for adequate internal consistency (Franzoi & Shields, 1984) In addition, evidence for convergent validity has been provided by studies showing significant correlations between the BES and the Rosenberg Self Esteem Scale (Franzoi & Herzog, 1986).

### *Research Design*

The present study was a post-test only design in which all measures were administered after the presentation of the experimental stimuli. A pre and post test design was not used so that participant’s responses to the experimental stimuli were not influenced by measures presented prior to experimental exposure of media images that specifically assessed body satisfaction of regions of the body, weight and shape, and the awareness and internalization of the thin ideal standard displayed in the media. Research suggests that the use of such pre-test measures may reveal the true purpose of the study or increase participants’ attention towards appearance issues which may result in expectancy effects (Hamilton, Mintz & Kashubeck-West, 2007).

### *Procedure*

Upon arrival at the laboratory for the experimental session, participants were provided with an informed consent form for the study. To distract participants from the true purpose of the study, they were told that the goal was to determine how mood and personality affect the enjoyment of television. After thoroughly reading and signing the informed consent form, participants were randomly assigned to one of four conditions, (Music video/Control Commercial, Music Video/Dove Commercial, Control Program/Dove Commercial, Control Program/Control Commercial), with the caveat that all four conditions ended up with an equal number of participants. This was achieved through the use of a web-based random number generator located at <http://www.randomizer.org/>. In each condition, participants watched one of the 4 DVDs containing approximately 20 min of television programming and commercials. To remove the possibility of experimenter bias, the person administering the testing session was unaware of which DVD each participant watched; the DVDs were compiled and labelled with a code by an independent assistant. All participants then filled out the questionnaire containing the dependent measures, demographic information, a question asking them what they believed was the true nature of the study, the SATAQ-3 and the BES. After completing the questionnaires participants were provided a debriefing form and thanked for their participation. All aspects of this study were completed by the participants individually.

### 5. RESULTS – APPEARANCE SATISFACTION

Results are presented for the final data set of 200 participants. Firstly, inter-rater reliability measures of the VAS data were calculated in the current study to assess the accuracy of the measured VAS items by the first rater using a comparison subsample of 15% of the scores ( $n=30$ ) with a second independent rater. Comparison of the cases revealed an average overall agreement of 97.5% for all the VAS variables (See Appendix J).

Secondly, to ensure that the data adheres to the standards of statistical analyses, the data was screened and assumptions of independence and normality. The assumption of normality was assessed using histograms with a normal curve, as well z-score calculations of skewness and kurtosis ( $p < .05$ ). For the four appearance satisfaction outcome variables (Facial, Weight and Shape, Overall Appearance and Averaged Appearance Satisfaction) the histograms appear to approximate a normal (symmetrical) distribution. The calculations of skewness and kurtosis reveal that all the appearance satisfaction factors, except the Weight and Shape Satisfaction distribution which appears platykurtic, approximate a normal distribution (See Appendix K). The calculations further indicate that the SATAQ-3 subscales approximate a normal distribution with the exception of the Pressure subscale which appears platykurtic (See Appendix K). The distributions of the BES subscales Weight Concern and Sexual Attractiveness are both slightly positively skewed and BES Weight Concern is leptokurtic. Furthermore, both distributions of age and BMI are positively skewed and leptokurtic. However, considering ANOVA's are robust to violations of normality and skewness and kurtosis pose less of a concern with large sample sizes (200 or more) the Weight and Shape Satisfaction, Pressure subscale of the SATAQ-3, BES subscales Weight Concern and Sexual Attractiveness, age and BMI variables were not considered problematic (Field, 2005). Therefore the shape of the distribution should be the

criterion to indicate non-normal distributions. Figure 6 (See Appendix L) presents the histogram with normal curve for the independent variables: Facial Appearance, Weight and Shape, Overall Appearance, Averaged appearance Satisfaction, SATAQ- 3 subscales (General, Athlete, Pressure and Information), BES subscales (Sexual Attractiveness and Weight Concern), Age and BMI. All independent variables approximate a normal distribution for the sample of undergraduate females.

Additionally, to evaluate if there were any group differences across measures of personality, age, and BMI a series of 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) Analyses of Variance (ANOVA) were conducted. Analyses revealed that participants were not significantly different across conditions as presented in Table 1.

Next, a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) Analysis of Variance (ANOVA) was conducted on participant's overall enjoyment of the television programs and commercials. Analysis revealed that participant's enjoyment of the different programs (Music Videos or Planet Earth) was significantly different  $F(1, 196) = .113.657, p = .000, \eta_p^2 = .065$ , with the music video ( $M= 44.42, SD=29.14$ ) receiving a higher mean rating than the control program ( $M= 29.92, SD=26.21$ ). Participant's overall enjoyment of the commercials was not significantly different between the intervention commercial condition ( $M= 44.32, SD=27.69$ ) and the control commercial condition ( $M= 39.00, SD=30.88$ ). Subsequent analyses were evaluated controlling for enjoyment of the television programs by comparing the ANOVA and ANCOVA analyses of the main depended variables with enjoyment as a covariate and without enjoyment as a covariate. Results were not significantly influenced and thus enjoyment was removed.

Table 1

ANOVA results, means and standard deviations for personality, BMI and Age across condition.

Variable	Mean (SD)								
	Program		Commercial		Music video conditions		Control program conditions		
	F value	p value	F value	p value	Control	Dove	Control	Dove	
Personality									
Extraversion	$F(3,196)=3.037$	.083	$F(3,196)=.222$	.638	57.60 (28.34)	53.30 (27.13)	49.37 (27.13)	49.13 (25.86)	
Agreeable	$F(3,196)=.944$	.332	$F(3,196)=.029$	.865	68.98 (21.16)	69.07 (23.70)	73.61 (23.91)	72.77 (19.38)	
Emotional Stability	$F(3,196)=1.480$	.225	$F(3,196)=.150$	.699	32.14 (20.80)	31.55 (21.65)	35.90 (25.63)	34.91 (23.81)	
Conscientious	$F(3,196)=.205$	.651	$F(3,196)=.755$	.386	38.56 (26.02)	41.66 (26.37)	39.85 (31.05)	43.30 (25.34)	
Openness	$F(3,196)=1.267$	.262	$F(3,196)=.036$	.849	59.63 (22.70)	59.36 (27.22)	55.88 (23.35)	55.24 (23.28)	
Age	$F(3,196)=1.108$	.294	$F(3,196)=1.998$	.159	20.28 (2.85)	19.20 (1.84)	19.16 (1.92)	19.50 (2.44)	
BMI	$F(3,196)=7.016$	.598	$F(3,196)=3.355$	.096	21.29 (2.93)	21.76 (3.48)	21.21 (2.96)	22.80 (4.30)	

Note. Personality, Extraversion, Agreeableness, Emotional Stability, Conscientiousness, and Openness, were assessed using bipolar responses on a Visual Analog Scale. Levene's test of homogeneity of variances all non significant.

Correlations between state VAS measures of appearance satisfaction and trait measures presented in Table 5 indicates the correlations between the dependent measures, the moderating variables and the demographic information taken in the study for the sample of 200 participants. As can be seen in Table 5, the VAS scores of state appearance satisfaction were significantly correlated with several of the moderating variables. All three individual VAS items were significantly correlated with both subscales of the BES, and with the Pressure and General subscales of the SATAQ-3. The VAS measure of satisfaction with facial appearance was correlated most strongly with the BES Sexual Attractiveness subscale,  $r = .42, p < .01$ , and the SATAQ-3 General subscale,  $r = -.24, p < .01$  and therefore these subscales were used as moderators in the subsequent analysis of this dependent measure. In contrast, the other two VAS items (weight and shape and overall appearance satisfaction) were relatively more strongly correlated with the BES Weight Concern subscale (weight and shape,  $r = .71, p < .01$ , and overall appearance,  $r = .53, p < .01$ ) and the SATAQ-3 Pressure subscale (weight and shape,  $r = -.41, p < .01$ , and overall appearance,  $r = -.33, p < .01$ ) and therefore these subscales were used as moderators in the subsequent analyses of these dependent measures. The weight and shape satisfaction and overall appearance satisfaction VAS items were also significantly correlated with BMI,  $r = -.39, p < .01$  and  $r = -.18, p < .05$ , respectively. Therefore, in the subsequent analyses of weight and shape satisfaction and overall appearance satisfaction BMI was included as a covariate.

Table 2

*Correlations between variables*

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Facial appearance	-	.46**	.72**	.35**	.42**	-.11	-.22**	-.13	-.24**	.02	.01
2. Weight and shape		-	.71**	.71**	.36**	-.08	-.41**	-.25**	-.35**	-.07	-.39**
3. Overall appearance			-	.53**	.45**	-.08	-.33**	-.18*	-.29**	-.01	-.18*
4. BES: weight concern				-	.52**	-.08	-.49**	-.36**	-.40**	.07	-.35**
5. BES: sexual attractiveness					-	-.03	-.28**	-.23**	-.36**	.20**	-.01
6. SATAQ-3: Information						-	.29**	.08	.43**	-.01	-.13
7. SATAQ-3: Pressure							-	.43**	.72**	-.05	.19**
8. SATAQ-3: Athlete								-	.41**	.01	.07
9. SATAQ-3: General									-	-.06	.02
10. Age										-	.09
11. BMI											-

Note: \* $p < 0.05$  \*\* $p < 0.01$

The evaluation of the study's moderators (the subscales of the BES and SATAQ-3) as continuous variables was conducted by multiple regression analysis to gain an understanding of the influence of the full range of the individual differences in these variables. However, this analysis resulted in non-significant effects for television program and commercial (See Appendix M). To allow comparison between the current study and previous studies, the moderators were evaluated in the subsequent analyses as dichotomous variables by median split which is a common procedure used within this area of research, allowing for assessment of participants as low or high internalizers as well as having low or high body dissatisfaction. Therefore, low trait body satisfaction as indicated by the Sexual Attractiveness and Weight Concern subscales of the BES, was considered as being at or below the sample median (44.00 and 28.50, respectively) whereas high trait body satisfaction was considered as above the sample median. Additionally, low internalization, as indicated by the Pressure and General subscales of the SATAQ-3, was considered as being at or below the sample median (22.00 and 27.00, respectively) whereas high trait body satisfaction was considered as above the sample median. The middle of the range of possible scores for each subscale (27 for General, 21 for Pressure, 39 for Sexual Attractiveness, and 30 for Weight Concern) approximates the median scores of the sample. Therefore, the median split for each scale coincides closely with a theoretically meaningful cutoff point, a score of 3 ("Have no feelings on way or another" for the BES and "Neither agree nor disagree" for the SATAQ-3) which is the middle of the 5 point scale used for each measure (See Appendix N). Thus, the choice of median split is theoretically valid, and provides a means of comparison with previous research. Means and standard deviations of the VAS items and moderator variables, across the four conditions are presented in Table 6 (See Appendix O).

### *Main Hypotheses*

*Facial Appearance Satisfaction.* An Analysis of Variance (ANOVA) was conducted assessing VAS facial appearance satisfaction using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) x 2 (BES Sexual Attractiveness: median and below vs. above median) x 2 (SATAQ-3 General: median and below vs. above median) model. Analysis revealed no significant main effects for Program,  $F(1, 184) = .451, p = .50, \eta_p^2 = .002$ , or Commercial,  $F(1, 184) = .135, p = .71, \eta_p^2 = .001$ . Analysis indicated a significant main effect for BES Sexual Attractiveness,  $F(1, 184) = 9.479, p = .002, \eta_p^2 = .049$ , and SATAQ-3 General,  $F(1, 184) = 4.408, p = .037, \eta_p^2 = .023$ . Participants at or below the median on the Sexual Attractiveness subscale of the BES reported significantly lower levels of state facial appearance satisfaction ( $M = 54.02$ ) than those who scored above the median ( $M = 64.16$ ). Participants who scored at or below the median on the SATAQ-3 General subscale reported significantly higher levels of state facial appearance satisfaction ( $M = 62.55$ ) than those who scored above the median ( $M = 55.63$ ). No significant interactions resulted from this analysis.

*Weight and Shape Satisfaction.* An Analysis of Covariance (ANCOVA) was conducted assessing VAS weight and shape satisfaction using 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) x 2 (BES Weight Concern: median and below vs. above median) by 2 (SATAQ-3 Pressure: median and below vs. above median) model with BMI as a covariate. Analysis revealed no significant main effects for Program  $F(1, 183) = .238, p = .626, \eta_p^2 = .001$ , or Commercial  $F(1, 183) = .009, p = .924, \eta_p^2 = .000$ . However, analysis did reveal the covariate, BMI, was significantly related to weight and shape satisfaction,  $F(1, 183) = 9.464, p = .002, \eta_p^2 = .049$ . This significant negative relationship indicates that as BMI increases weight and shape satisfaction decreases. Analysis further indicated a significant main effect for BES

Weight Concern,  $F(1, 183) = 61.652, p = .000, \eta_p^2 = .252$  and SATAQ-3 Pressure,  $F(1, 183) = 5.234, p = .023, \eta_p^2 = .028$ , when controlling for BMI. Participants at or below the median on the Weight Concern subscale of the BES reported significantly lower levels of state weight and shape satisfaction ( $M = 37.87$ ) than those who scored above the median ( $M = 64.90$ ). Participants who scored above the median on SATAQ-3 Pressure subscale reported significantly lower levels of state weight and shape satisfaction ( $M = 47.66$ ) than participants who scored at or below the median ( $M = 55.11$ ).

The interaction between Program, BES Weight Concern and SATAQ-3 Pressure approached, but did not achieve, significance,  $F(1, 183) = 3.836, p = .052, \eta_p^2 = .021$ . Finally, a significant interaction between Commercial, BES Weight Concern and SATAQ-3 Pressure  $F(1, 183) = 5.878, p = .016, \eta_p^2 = .031$ , resulted from this analysis. In order to illustrate this significant interaction, Figure 1 shows participants' mean state weight and shape satisfaction, by Commercial, BES Weight Concern and SATAQ-3 Pressure.

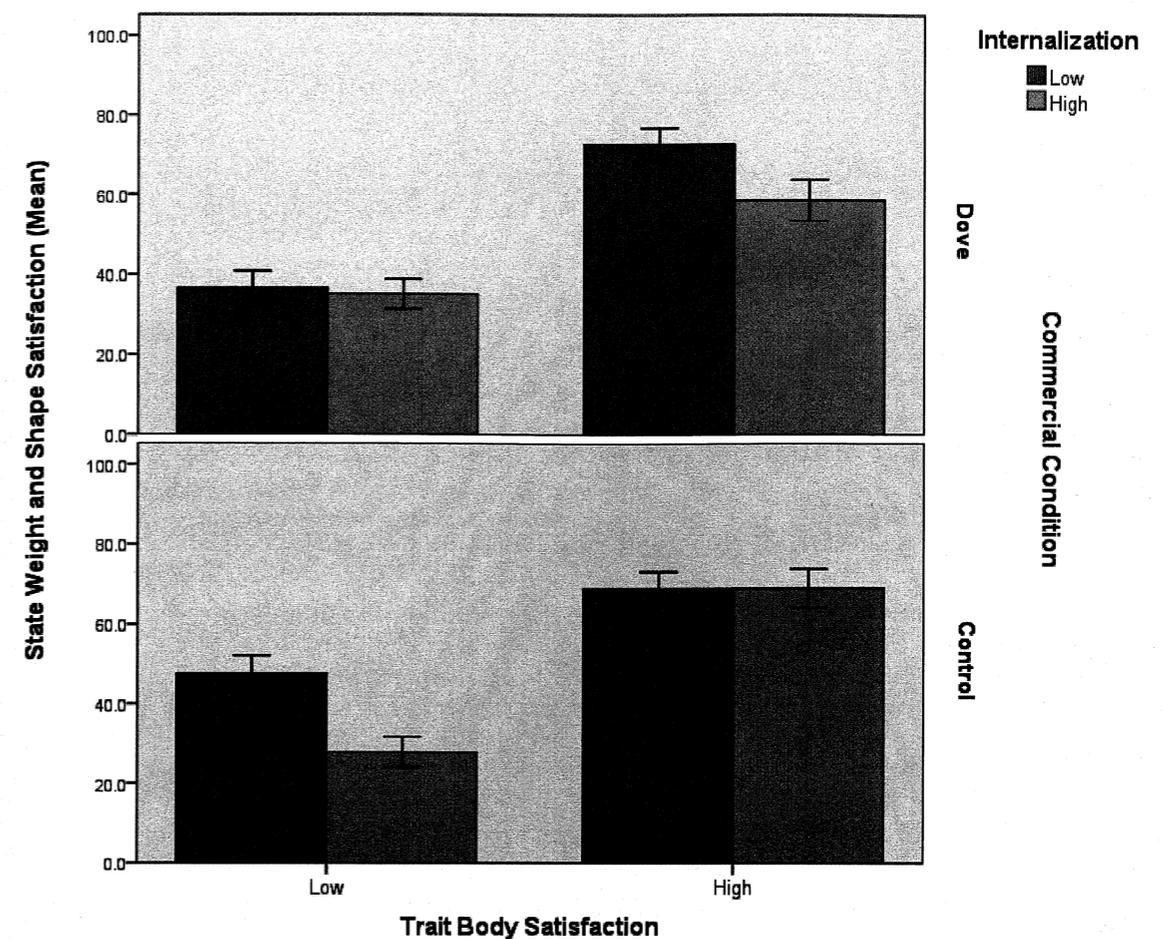


Figure 1: The interaction between Commercial, Trait Body Satisfaction (BES subscale weight concern) and Internalization (SATAQ-3 subscale pressure) for state weight and shape satisfaction (VAS Weight and Shape satisfaction). SE +/-

A post-hoc Tukey's HSD test (with correction for unequal sample sizes) indicated that at each of the four combinations of BES Weight Concern level (median and below, above median) and SATAQ-3 Pressure level (median and below, above median) there was no significant effect of Commercial (Dove vs. control). The effect of SATAQ-3 Pressure (median and below vs. above median) was non-significant at each of the four combinations of BES Weight Concern level (median and below, above median) and Commercial condition (Dove, control). Regarding

BES Weight Concern, for participants who scored at or below the median on the SATAQ-3 Pressure subscale, the effect of BES Weight Concern was significant for both the Dove commercial condition,  $p < .001$ , and the control commercial condition,  $p < .05$ . This indicates that, for participants who feel relatively less pressure from the media, those who report low levels of *trait* satisfaction with their weight (i.e. those who score at the median or below on the BES Weight Concern subscale) also demonstrate lower levels of *state* weight and shape satisfaction than those who report high levels of trait satisfaction with their weight (i.e. those who score above the median on the BES Weight Concern subscale), when they are exposed to the Dove commercial and when they are exposed to the control commercials. However, for participants who scored above the median on the SATAQ-3 Pressure subscale, the effect of BES Weight Concern was significant in the control commercial condition,  $p < .001$ , but not in the Dove commercial condition. This indicates that, for the participants who perceive relatively more pressure from the media, those who report low levels of *trait* satisfaction with their weight only demonstrate lower *state* weight and shape satisfaction than those who report higher levels of trait satisfaction with their weight after exposure to the control commercials videos and *not* after exposure to the Dove commercial. In other words, among those participants who were relatively more sensitive to media influence, the difference in *state* weight and shape satisfaction between participants who report low levels of *trait* weight satisfaction and those who report high levels of trait weight satisfaction was significant after exposure to the control commercials, but not after exposure to the Dove commercial. This indicates that the Dove Commercial was able to influence participant's current weight and shape satisfaction for individuals with low levels of trait weight satisfaction who internalize media ideals.

*Overall Appearance Satisfaction.* An Analysis of Covariance (ANCOVA) was conducted assessing overall appearance satisfaction using 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) x 2 (BES Weight Concern: median and below vs. above median) x 2 (SATAQ-3 Pressure: median and below vs. above median) model with BMI as a covariate. Analysis revealed a non-significant main effect for Commercial  $F(1, 183) = .984, p = .322, \eta_p^2 = .005$ , and the covariate, BMI, was not significant  $F(1, 183) = .072, p = .789, \eta_p^2 = .000$ . The main effects for Program  $F(1, 183) = 3.246, p = .073, \eta_p^2 = .017$ , and SATAQ-3 Pressure,  $F(1, 183) = 3.167, p = .077, \eta_p^2 = .017$  approached, but did not achieve, significance. Furthermore, a significant main effect for the BES Weight Concern,  $F(1, 183) = 22.714, p = .000, \eta_p^2 = .110$  was revealed. Participants at or below the median on the Weight Concern subscale of the BES reported significantly lower levels of state overall appearance satisfaction ( $M = 49.31$ ) than those who scored above the median ( $M = 65.88$ ). Interactions approaching significance between Commercial, BES Weight Concern and SATAQ-3 Pressure  $F(1, 183) = 3.609, p = .059, \eta_p^2 = .019$  and Program, Commercial, BES Weight Concern and SATAQ-3 Pressure  $F(1, 183) = 2.838, p = .094, \eta_p^2 = .015$  also resulted from this analysis.

#### *Evaluation of Hypotheses*

*First Hypothesis.* The first hypothesis asked whether "thin-ideal" television programs in the form of music videos would be detrimental to participant's appearance satisfaction; replicating previous experimental investigations of the impact of music videos (Tiggemann & Slater, 2004). Specifically, the prediction, H1, was that for participants who do not see the Dove commercial, those who view the "thin-ideal" television programs (music videos) would demonstrate significantly lower levels of appearance satisfaction than those who view the control (documentary) program. Although the means of all three dependent variables were in the

predicted direction (with the means of the music video/control commercial group below the means of the control program/control commercial group) none of these differences achieved statistical significance (none of the main effects of Program, nor the interaction terms, Program x Commercial, were significant for any of the three outcome variables). Thus, there was no support offered to H1 in the present study.

*Second Hypothesis.* The second hypothesis proposed that the detrimental effect of music videos on appearance satisfaction hypothesized in H1 would be moderated by participants' level of internalization of the thin-ideal. Specifically, in H2 it was predicted that among participants who do not see the Dove commercial, those who score above the median on the SATAQ-3 would have significantly higher levels of appearance dissatisfaction in response to the music videos than those who score below the median of the SATAQ-3. In the present study, participants who scored above the median on the SATAQ-3 General subscale reported lower satisfaction with their facial appearance than participants who scored at or below the median on that subscale. Participants who scored above the median on the SATAQ-3 Pressure subscale reported lower satisfaction with their weight and shape and lower overall appearance satisfaction than participants who scored at or below the median on that subscale. Thus, perceived pressure from the media regarding appearance did significantly affect participants' appearance satisfaction. However, contrary to H2, these were main effects, not interactions with commercial type or program type. That is, all participants, irrespective of the type of program or commercial they watched, demonstrated lower state appearance satisfaction if they reported feeling more pressure from the media. Thus, although H2 was not specifically supported, a general effect of perceived pressure from the media was found on participants' state appearance satisfaction.

*Third Hypothesis.* The third hypothesis investigated was that pre-existing trait body dissatisfaction, BES, would moderate the detrimental effects of media images. Specifically, in H3 it was predicted that for participants who do not see the intervention commercial, those who score below the median on the BES will have significantly higher levels of body dissatisfaction in response to the music videos than those who score above the median of the BES.

As with the prediction regarding the moderating influence of the SATAQ-3 scale, a main effect of one of the subscales of BES was significant for all three dependent variables (BES Sexual Attractiveness for facial satisfaction, and BES Weight Concern for weight and shape satisfaction and overall appearance satisfaction), meaning that participants who reported lower trait appearance satisfaction on the BES also reported lower state appearance satisfaction than participants who reported higher trait appearance satisfaction on the BES. However, for state weight and shape satisfaction, the main effect of BES Weight Concern was qualified by a significant interaction, between BES Weight Concern, Commercial and SATAQ-3 Pressure. This interaction revealed that, whereas the difference in state weight and shape satisfaction between those high and low in trait weight concern was generally significant, it was not significant for participants who scored above the median on perceived pressure from the media (as measured by the SATAQ-3) and who were exposed either to the Dove commercial.

*Fourth Hypothesis.* The fourth and final hypothesis proposed in the present study was that the Dove (intervention) commercial, would successfully mitigate at least some of the detrimental effect of the thin-ideal programs. Specifically, it was predicted in H4 that for participants exposed to the music videos, those who viewed the Dove commercial would report higher levels of appearance satisfaction than those who viewed the control commercials. Although the pattern of means was in the predicted direction for all three dependent variables

(with the means of the participants in the music video/Dove commercial condition higher than the means of participants in the music video/control commercial condition), this hypothesis was not supported by statistically significant differences between those means.

## 6. RESULTS – AWARENESS OF EXPERIMENTAL HYPOTHESES

Evaluation of participant's awareness of experimental hypothesis was also done to determine if demand characteristics may have influenced the results. A Chi-Square analysis was conducted using a 2 (Aware: Television effects vs. Television effects on body image or appearance) x 4 (Condition: Music video/Dove vs. Music video/control commercial vs. Control Program/Dove vs. Control Program/control commercial) model. There was a significant relationship between condition and participant's awareness of the experimental hypothesis,  $\chi^2(3) = 18.525, p = .000$ , the effect size was .304. Odds ratio indicates that participants that viewed the music videos and the control commercial were 5.7 times more likely to indicate awareness of the true hypothesis of the study than participants that viewed the control television and the control commercial. Furthermore, odds ratio indicates that participants that viewed the music videos and the Dove commercial were 14.7 times more likely to indicate awareness of the true hypothesis of the study than participants that viewed the control television and the control commercial.

Follow up Chi-Square analyses were conducted for Program, 2 (Program: music video vs. control) x 2 (Aware: Television effects vs. Television effects on body image or appearance), and Commercial, 2 (Commercial: Dove vs. control) x 2 (Aware: Television effects vs. Television effects on body image or appearance) separately. The follow-up test for Program revealed that participants who viewed the music videos were significantly more likely to be aware of the experimental hypothesis than participants who were exposed to the control program,  $\chi^2(1) = 10.821, p = .001$ , the effect size was .233. Odds ratio indicates that participants who viewed the music videos were 2.9 times more likely to indicate awareness of the true hypothesis of the study than participants who viewed the control television. Evaluation of the relationship between the

commercial conditions (Dove vs. Control) and Aware (Aware: Television effects vs. Television effects on body image or appearance) revealed that participants who viewed the Dove commercial were significantly more likely to indicate awareness of the true nature of the study than participants who viewed the control commercials,  $\chi^2(1) = 7.091, p = .008$ , the effect size was  $.188$ . Odds ratio indicated that participants who viewed the Dove commercial were 2.4 times more likely to indicate awareness of the true hypothesis of the study compared to participants who viewed the control commercial. Analyses evaluating the influence of participants' awareness of the studies true hypothesis on the main dependent measures were conducted; however participants who were aware of the study hypothesis did not show a different pattern of results from participants who were unaware of the study hypothesis (See Appendix P).

## 7. RESULTS – MOOD

Although the mood and personality VAS variables were originally intended just to serve as distracter items, adding credibility to the cover story, some interesting results emerged when mood was considered as a dependent measure, in analyses similar to those conducted on the VAS measures of state appearance satisfaction.

Table 3.

### *Correlations between VAS measures of mood*

Variable	1.	2.	3.	4.
1. Worried	-	.59**	.43**	.56**
2. Angry		-	.42**	.44**
3. Confident (Reverse scored)			-	.50**
4. Happy (Reverse scored)				-

Note: \*\* $p < .01$

As can be seen in Table 7, the VAS scores of mood were significantly correlated. Table 8 displays the means (and standard deviations) of the four mood VAS items by condition. All mood items were scored so that lower values indicated poorer mood (i.e. lower scores indicated greater worry, greater anger, lower confidence and lower happiness). Because the VAS mood items were all significantly correlated, and because all four demonstrated the same pattern across conditions, a combined VAS mood variable was created from the average of the four original variables.

Table 4.

*Descriptive statistics for measures by condition*

Variable	<u>Mean (SD)</u>			
	<u>Music video conditions</u>		<u>Control program conditions</u>	
	Control	Dove	Control	Dove
	commercials	commercial	commercials	commercial
	(n = 50)	(n = 50)	(n = 50)	(n = 50)
VAS items				
Worried	64.09 (21.92)	70.76 (26.10)	70.58 (26.81)	70.16 (22.13)
Angry	72.97 (24.42)	82.04 (20.33)	82.85 (22.00)	80.81 (18.67)
Confident	57.17 (25.69)	70.91 (24.69)	66.86 (20.95)	67.08 (21.17)
Happy	62.20 (19.56)	71.74 (21.66)	70.22 (18.29)	70.48 (20.71)
Mood	64.11 (17.16)	73.86 (18.62)	72.63 (16.80)	72.13 (16.80)

Note. VAS = Visual Analog Scale, scored on 0-100 scale.

An Analysis of Variance (ANOVA) was conducted assessing the combined VAS Mood using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model. Analysis revealed no significant main effects for Program,  $F(1, 196) = 1.912, p = .168, \eta_p^2 = .010$ . However, the main effect for Commercial approached significance,  $F(1, 196) = 3.557, p = .061, \eta_p^2 = .018$ . Furthermore, the interaction between Commercial and Program was significant,  $F(1, 196) = 4.358, p = .038, \eta_p^2 = .024$ . Figure 2 illustrates this significant interaction.

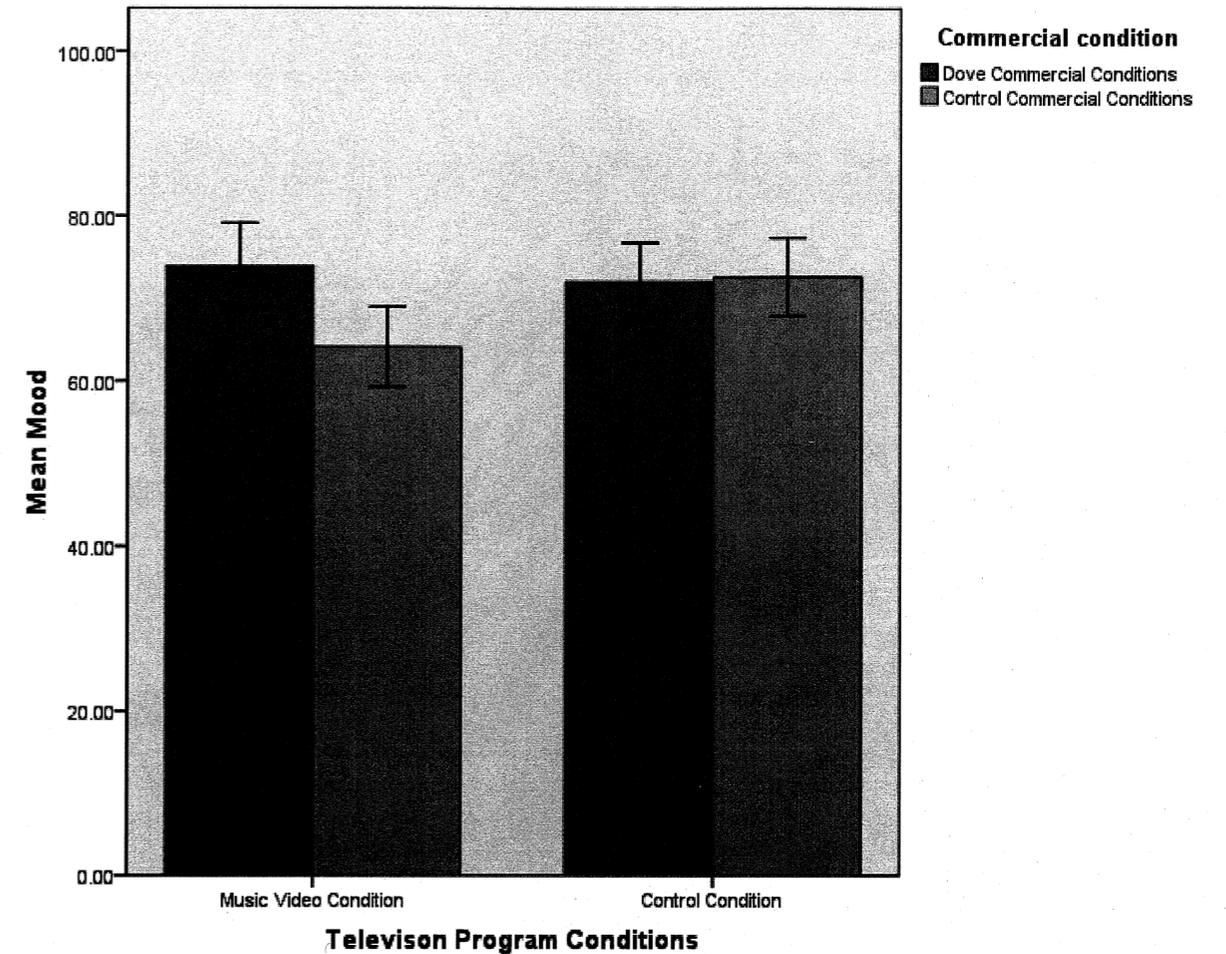


Figure 2: The interaction between Commercial and Television Program regarding the combined VAS Mood variable. SE +/-

A post-hoc Ryan REGWQ Procedure (as recommended by Howell, 2007) was conducted on this interaction. This analysis revealed that the mean mood rating of participants in the Music Video/Control Commercial condition was significantly below the mean mood rating of participants in all three other conditions, at the  $p < .05$  level. The mean mood ratings of participants in the three other conditions did not differ significantly from one another.

### *Evaluation of Hypotheses*

In this section, the first and fourth hypotheses that were proposed for state appearance satisfaction are evaluated with mood in place of the appearance satisfaction outcome variables.

In accordance with the first hypothesis, among participants who were not exposed to the Dove commercial, those who viewed the “thin-ideal” television programs (music videos) demonstrated significantly lower mood levels than participants who were exposed to the control (documentary) program. In accordance with the fourth hypothesis, among participants who viewed the music videos, those who were exposed to the Dove commercial reported significantly higher mood levels than those who did not view the Dove commercial. Thus, support was offered to both the first and fourth hypotheses, when mood was used as the dependent variable.

## 8. DISCUSSION

Interventions have been formulated to decrease the negative effect of thin media on women’s body satisfaction. These interventions have been found to be effective by promoting critical evaluation of media images which decreased participant’s engagement in social comparison with media images. Although some are effective, current interventions are limited by their length and the artificial nature of their presentation. These factors prevent widespread distribution of the information necessary to mitigate the adverse effects of thin ideal media experienced by the majority of women. Considering the media is the most pervasive and powerful social influence projecting the thin ideal, the wide prevalence of body dissatisfaction (Tiggeman & Slater, 2004), and that television programs are probably the most widely-viewed form of the mass media, interventions that can reach an extended audience, and which are presented in a naturalistic manner are necessary. This research has taken the first step towards investigating the effectiveness of real world media interventions that present information similar to previous intervention studies. Considering the present study was conducted in an ethnically diverse Canadian university and that the content of the television and commercial material used here is displayed in many countries, the present findings may be relevant to women around the world.

The current study assessed whether the information presented in the Dove Commercial “Evolution” by Unilever could mitigate the negative effects of thin ideal images. This study was designed to simulate regular television, presenting the Dove commercial with other advertisements during a commercial break. Therefore, this research takes into account the limitation of presenting media in an unrealistic manner, which has been attributed to the experimental manipulations of many prior media and body image studies (Hargreaves &

Tiggemann, 2003). Taking this into account, the results of this study should provide a more accurate assessment of the effect of thin media images during realistic television viewing than previous studies.

Using a social comparison perspective to interpret the results, the current study examined the effects of exposure to thin media images in Music Videos on women's body dissatisfaction and mood, and investigated the mitigating power of a "real world" media intervention.

#### *Music Video Manipulation*

The results of the first line of present inquiry, regarding the influence of thin ideal music videos on women's body dissatisfaction, were inconsistent with previous literature. Hypothesis one postulated that exposure to thin ideal music videos would significantly decrease women's body dissatisfaction. In the current study, participants who viewed Music Videos did not report significantly different levels of body dissatisfaction than participants who viewed control television, although the results revealed some trends in the hypothesized direction. Although unexpected, the resulting non-significant difference in body dissatisfaction may be partly explained by the fact that the effect sizes for women's body dissatisfaction in research with significant effects has been consistently small to moderate,  $d = -0.28$  (Grabe et al., 2008). Consequently, it is difficult for research to uncover the influence of thin ideal media without using very large sample sizes. In addition, experimental variation in the many variables that influence the presentation of such stimuli, such as image type, type of presentation method, and degree of thinness and attractiveness of the stimuli, may affect the size and direction of the results.

The majority of previous research supports the notion that thin media images are detrimental to women's body satisfaction. However, many studies that support the causal

relationship between thin media images and decreased body satisfaction for women employ images from fashion magazines as the experimental stimuli. The meta-analysis by Groesz et al. (2002) shows that of the 25 experimental studies only 4 used stimuli from television, all of which were TV commercials (not programs). Additionally, in the Grabe et al. (2008) meta-analysis, of the 34 experimental studies reviewed, only 10 assessed the influence of thin ideal television, of which only one assessed a television program and one assessed music videos (Grabe et al., 2008). Therefore, research in the area of television programs' influence on women's appearance satisfaction is still in its infancy and we cannot assume that televised programs will have the same detrimental effect as thin ideal images from magazines or television ads.

Regarding the relationship between media exposure and body satisfaction Tiggemann (2003) states that "television and magazines are not the same!" (p.418). Tiggemann suggests that images from magazines and television can not be assumed to affect people in the same way and proposes the theoretical argument that social comparison may not arise from exposure to television images (Tiggemann 2003, 2005; see also Posavac et al., 1998 and Want et al., 2009). Tiggemann (2005) indicated that one primary objective for engaging in viewing television programs is for entertainment value, and therefore this medium is less likely to invoke social comparison, whereas a primary objective for reading magazines is that women seek information on "beauty (Tiggemann, 2003), weight loss (Thomsen et al., 2002) and for the purpose of self evaluation (Martin and Gentry, 1997)" (Want et al., 2009, p. 3). Although research suggests that magazine ads and television commercials may prompt more social comparison than television programs, little research had theorized about the motivation to watch music videos. Music videos are viewed for entertainment, however they also employ a focus on women's bodies, present women as sexualized objects and lack the story line of many television shows. Therefore, music

videos can not be grouped in with regular television shows, watched solely for entertainment, and research is necessary to investigate the level to which they encourage social comparison.

Tiggemann and Slater (2004) was the first experimental study to show that music videos featuring thin women were detrimental to the body satisfaction of women between 18-30, compared to control music videos (that featured ordinary people and scenic clips). Beyond considering variations in the specific music videos that were used, there are many additional factors that could have invoked more appearance comparison to the music videos in the Tiggemann and Slater (2004) study. First of all Tiggemann and Slater (2004) manipulated the instructions provided to participants when viewing the media, asking participants to engage in comparison (comparing their attractiveness to the women in the videos) or distracter (rating the creativity of the videos) tasks, whereas participants in the current study were instructed to engage in normal viewing behavior and no tasks were given during viewing. The instructions provided to participants by Tiggemann and Slater (2004) were given in a subtle manner using five rating questions for each music video. Therefore, participants may have attended to the music videos to a higher degree during this rating task than during normal television viewing behavior.

A second possible influential factor employed by Tiggemann and Slater (2004) was a pre and post test design, in which participants completed identical VAS measures of mood and body satisfaction directly before and immediately after viewing the video sequence. In the current study no pre-test was used and the implementation of the key dependent measures was done among other VAS items that were intending to facilitate the cover story. Furthermore, the three key dependent measures of appearance also varied between the studies, Tiggemann and Slater (2004) employed VAS measures concerning feelings of fatness, physically attractiveness, and satisfaction with body size and shape (body satisfaction), while the current study utilized VAS

measures of facial appearance, weight and shape and overall appearance. In the Tiggemann and Slater (2004) study demand characteristics resulting from the pre and post measure design and from the rating instructions could have heightened the degree of comparison to the appearance music videos.

Many previous experimental designs have employed pre and post test measures to assess mood and body dissatisfaction. However, research reports that the likelihood of finding adverse effects is increased when participants are aware of the true purpose of the study (Mills et al., 2002). Considering the widely publicized knowledge that thin media images are detrimental to appearance satisfaction, an experimental study that did not assess pre test satisfaction and employed a naturalistic viewing design was necessary to evaluate thin media effects without the influence of demand characteristics. To combat the issues of demand characteristics the current study employed three methods, firstly measuring appearance satisfaction only once, after exposure, to lessen the chance of alerting participants to the true nature of the study, second by providing a cover story with outcome questions embedded between decoy measures that relate to the cover story and finally by assessing the naivety of the participants to the actual purpose. Evaluation of participant's awareness of experimental hypothesis indicated that 57 participants had some knowledge of the true nature of the study with more participants in the experimental Dove condition compared to the other three conditions.

Additionally, there are many differences in the stimuli used that might contribute to the varying results between the current study and the study by Tiggemann and Slater (2004). Different music videos were used in each of the studies and were pre-rated slightly differently for attractiveness and thinness. In current study the mean attractiveness scores for the images ranged from 4.50 to 6.30 and the thinness of the images ranged from 5.50 to 6.30 (See Table 1),

compared to the ratings of 6.4 for mean attractiveness focus and 6.3 for presence of thin women in Tiggemann and Slater (2004). Moreover, the control video sequences of the two studies varied in type. Tiggemann and Slater (2004) used music videos that still featured people stated as “ordinary” with a mean of 2.9 for attractiveness focus and 1.6 for thin women being featured. However the control program in the current study was a segment of a wildlife documentary (“Planet Earth”) that featured no images of people. Considering that previous research has found that viewing normal or plus size models can produce positive appearance satisfaction compared to viewing of thin models and no models, Tiggemann and Slater (2004) may have evaluated two appearance effects, upward social comparison to thin models *and* downward social comparison to “ordinary” people.

Therefore, the possibility of Tiggemann and Slater (2004) tapping into more than one effect may also partly account for difference between the results of their study and the current study.

#### *Moderators*

Individual differences in vulnerability to media that leads to negative evaluations of appearance mean that not all women are influenced in the same way. Therefore, the second and third area of inquiry of the current study investigated two of the most prominent moderating influences in the relationship between thin ideal media and women’s appearance dissatisfaction, namely internalization and trait body satisfaction. Hypothesis two postulated that the degree to which women internalize as a personal goal the thin ideal image set forth by the media would moderate the relationship between exposure to thin ideal music videos and women’s body dissatisfaction. Hypothesis three investigated trait body dissatisfaction as a moderator, postulating that women with higher levels of trait body dissatisfaction would correspond to

higher levels of state appearance dissatisfaction following exposure to thin ideal music videos. The present study does show that both trait body dissatisfaction and internalization of media ideals significantly influence participants’ appearance satisfaction, although irrespective of media condition.

#### *Internalization of Media Ideals*

Internalization of media ideals regarding appearance as personal standards has been shown in previous research as a reliable moderator in the relationship between thin media exposure and women’s appearance satisfaction (Dittmar et al., 2009). Although the current research did not reveal a significant influence of internalization in the relationship between thin media and appearance satisfaction, a general effect of perceived pressure from the media resulted. This indicated that when women personally endorse the ideals of attractiveness presented in the media, their satisfaction with their own appearance was generally lower. This coincides with Cafri, Yamamiya, Brannick and Thompson’s (2005) meta-analysis, which identified internalization, the merging of the thin ideal into one’s own personal goal, as being highly associated with negative body satisfaction.

Considering that the ideal female in the media has been getting progressively thinner over the last 40 years, then the image of one’s ideal self for women who internalize these media ideals is also getting thinner, resulting in a greater discrepancy between one’s actual and ideal self image. Dittmar and colleagues (2009) report that internalization of thin media ideals is a moderating factor and weight-related self discrepancies (the differences between one’s actual and ideal self image) are a mediating factor in the relationship between exposure to thin ideal images of women and negative affect. Dittmar et al. (2009) showed that negative effects on women’s appearance satisfaction after exposure to thin ideal media can be accounted for by the

activation of this body image discrepancy, with greater internalization relating to a greater discrepancy and more detrimental effects. This may provide some an explanation as to the variation between the current research and previous research. If internalization of media ideals acts as a moderator in the relationship between thin ideal media images and women's body dissatisfaction under certain circumstances, specifically when there is activation of weight-related self discrepancies, then investigations must look into what triggers this activation to gain a better understanding of internalization. One explanation may lie in the instructions provided to participants. The current research only asked participants to engage in normal viewing behavior while viewing the media images and did not provide instructions to participants to engage in contemplation of the media images, either verbally or through tasks such as rating enjoyment, attractiveness or creativity during exposure (participants in the current study rated their enjoyment of the television material only after exposure). If instructions or tasks help to activate participant's contemplation of the differences between themselves and ideal media images, participants who internalize the attractiveness of those media images as personal standards will experience greater discrepancies resulting in decreased body satisfaction. Therefore, "the type of thoughts aroused in women when they are exposed to thin models is crucial" (Dittmar et al., 2009, p. 48). However, there is a trade-off here; studies in which participants are asked to engage in specific rating tasks, such as rating their enjoyment of the program or in which they are asked to make direct comparisons to the images may not provide an accurate assessment of the thoughts experienced by participants during normal viewing behavior.

#### *Trait Body Dissatisfaction*

Trait body dissatisfaction has been proposed as a moderator in the relationship between media influences and one's current state body satisfaction (Posavac, Posavac & Posavac, 1998).

Prior research indicates that women with pre-existing appearance dissatisfaction are more vulnerable to the influence of the thin ideal standards (Heinberg and Thompson, 1995). The current study assessed trait body dissatisfaction and did not reveal a significant influence in this link between thin media and state appearance satisfaction. However, a general effect emerged; not surprisingly, trait body satisfaction was significantly associated with state body satisfaction.

Considering that measures of trait body satisfaction are stable and enduring and the fact that demand characteristic can skew results of state body satisfaction, the current research chose not to assess pre-existing dissatisfaction directly prior to media exposure. Although many claim that women who have presented previous trait dissatisfaction with their bodies are more sensitive to adverse effects of thin media exposure, more research is necessary to parcel out the potential demand effects and create measures that do not reveal the true purpose of the study if presented before stimulus exposure.

#### *Dove Intervention*

For the final and main line of inquiry, the investigation into the intervention potential of a brief "real world" intervention in the relationship between body dissatisfaction and exposure to idealized media images, the current study cannot provide conclusive results regarding appearance satisfaction because of the non-significant results of the thin media exposure. Hypothesis four postulated that a brief "real world" intervention, the Dove commercial, may decrease the body dissatisfaction experienced by women exposed to thin ideal images in music videos. It was theorized that the Dove commercial may provide information to interrupt the comparisons that women make with idealized images, essentially providing information that may help to critically evaluate the images and showcase these images as inappropriate for comparison, preventing detrimental body image disturbance. This information was thought to

have the potential to change women's perceptions of idealized images by showing the behind the scenes techniques, change the behavior of engaging in upward comparisons with the ideal images, change cognitions concerning evaluations of their own bodies and how women are viewed in the media, and even change women's affect by reducing the negative impact of thin media images.

In the current study, participants who viewed music videos did not report significantly different levels of body dissatisfaction than participants who viewed control television and therefore the potential of this intervention to mitigate the social comparison of women to thin media images could not fully be evaluated. One theoretical reason that the Dove commercial may not have an effect on music videos is the fact that the techniques illustrated in the Dove commercial to alter the model were directed towards a photo. Therefore, the Dove commercial may have more influence on magazine images which can be altered using the same techniques, not all of which can be used in music videos. Computer techniques are one of the most astonishing aspects to the Dove commercial; altering the size of the mouth, ears and eyes, elongating the neck and smoothing the face. However, these computer techniques are not used with Music Videos. The techniques which may impact how participants process the music videos are the make-up, hair and camera techniques, which are only part of the Dove commercial.

Although it is unfortunate that more information could not be drawn from the current research about the potential for the Dove Commercial as an intervention in the relationship between thin media and women's appearance satisfaction, the results reveal the potential of the Dove commercial to influence women's body dissatisfaction, irrespective of television exposure condition. In the present study there was a significant interaction of weight and shape with commercial, trait body satisfaction and pressure from the media. Among those participants that

feel strong pressure to conform to media ideals, the current *state* weight and shape satisfaction of the participants who had low *trait* body satisfaction was lower than the *state* weight and shape satisfaction of those who had high *trait* body satisfaction only when participants were exposed to the control commercial, *not* when they were exposed to the Dove commercial. This suggests that the Dove commercial was influential to participants who strongly internalize media ideals, making the difference in state weight and shape satisfaction reduced between individuals with high and low trait weight satisfaction. This may be interpreted as the Dove Commercial raising the state weight and shape satisfaction for individuals with low trait weight satisfaction to a level similar to individuals with high levels of trait weight satisfaction, among those who strongly internalize media ideals.

#### *Mood*

To determine if this "real world" intervention has broader effects than on just appearance satisfaction, mood was evaluated as a dependent variable. Prior research has not investigated mood to the same level as appearance satisfaction, however it does indicate that thin media images can reduce participant's mood. Bessenoff (2006) states that exposure to thin ideal advertising (pictures) increased negative mood, specifically dejection-related and agitation-related moods, and increased levels of depression. Heinberg and Thompson (1995) demonstrated greater negative mood resulting from viewing commercials of thin media images compared to non-appearance control commercials. Additionally, changes in mood assessed with pre-to-post experimental designs indicate that decreases in mood result from thin ideal magazine (Pinhas, Toner, Ali, Garfinkel, & Stuckless, 1999) and television exposure (Cattarin et al., 2000).

Mills and colleagues (2002) suggest that exploration of thin ideal media images on mood may reveal significant detrimental effects more often than looking exclusively at appearance

satisfaction. They propose that since it is now a widely-held belief that media images are detrimental to appearance satisfaction, investigating mood as a dependent variable may reveal the actual influence thin media without the problem of demand characteristics. With the increasing promotion of the idea that thin media are detrimental to women's appearance satisfaction and the knowledge many women hold that "you should not compare your appearance with thin media models", participants may be less inclined to indicate their decreased appearance satisfaction after media exposure. Even music is incorporating the message that media image are harmful with lyrics in songs suggesting "Don't read beauty magazines. They'll only make you feel ugly" (Mills et al., 2002, p. 1694).

Consistent with previous research and the theoretical notion proposed by Mills and colleagues (2002) an interaction between program and commercial emerged in the present study when mood was considered as the outcome variable. Participants who viewed the thin media images and did not view the Dove commercial reported significantly lower mood than participants in all the other three conditions (music video/Dove commercial, control program/control commercial and control program/Dove commercial). However, these mood results are contrary to previous research by Tiggemann and Slater (2004) which found that thin ideal videos had no significant influence on mood. In the present study, the Dove commercial was able to decrease the detrimental influence of thin ideal images on mood. This interaction may provide evidence that the Dove commercial effectively mitigated some detrimental influence of music videos. Considering that mood may evaluate components of body image that are less prone to demand than the current research may be the first intervention to lessen body image disturbance in this construct.

#### *Limitations and Directions for Future Research*

The major limitation in the current research is the strength of the media manipulation, specifically the non-significant effect of idealized media on women's body satisfaction (no significant difference between the music video condition and control condition). Considering that H1 was not supported, the hypothesis that the Dove commercial could effectively mitigate detrimental effects of thin media images on appearance satisfaction could not be fully evaluated. Therefore, developing a follow up study with stronger exposure to thin media images may provide more conclusive results.

Furthermore, the choice to use music videos for the experimental stimuli showcasing thin ideal images in the current research may not have been ideal considering that relatively limited work has been done in this area. In retrospect employing the use of television advertisements as the thin ideal media would have presented a greater likelihood of finding a significant effect of thin ideal images on women's body satisfaction. This would also have had the added benefit of comparing the same type of media in the experimental stimuli and intervention (since the intervention itself was a commercial).

Follow up research that would allow pre-screening (mass testing session prior to the experimental session) would provide change scores between baseline and post-test, and a means to compare this potential intervention to previous successful interventions, such as Posavac and colleagues (2001) who only used participants with moderate to high levels of body dissatisfaction. Follow up research would also be beneficial to examine the broader effects of the Dove commercial, including effects on dieting behaviours, self esteem, media skepticism, and to

investigate long term influences of commercials that promote positive body image for women, such as the Dove commercial.

## 9. CONCLUSION

It has been said that beauty is “more than skin deep” and that “beauty is in the eye of the beholder”. However, western society is changing those views; magazines, television and commercials project a different view that beauty is all about one’s physical form and that only a thin-ideal is beautiful. A Cover Girl commercial with Ellen DeGeneres, blandly states that “Inner beauty is important, but outer beauty is more important!” (2009). These mediums promote views that self worth is judged by how closely a person resembles the thin ideal.

Although the majority of mass media communicates this message, there are those that encourage the view that beauty comes in all shapes and sizes. Dove’s campaign of “real beauty” promotes the idea that women’s beauty within the media is simulated, that models are made to look flawless with make-up, hair, and computer techniques that change the structure of models faces, and airbrushes out any remaining imperfections. With the media influencing millions of women’s body image, interventions that mitigate the harmful effects of these societal projections are essential. This current study indicated that a “real-world” intervention, consisting of a commercial, has the potential to mitigate the detrimental effects that ideal media images have on women’s mood, and can influence the appearance satisfaction of participants who internalize media ideals. Essentially, this study points out that illustrating the techniques used to create media representations of women, may contribute to decreasing the damaged body image of women.

## Personality and the Enjoyment of Television

**Abstract** This social psychology study investigates psychological factors that influence people's opinions and enjoyment of television. The 60 min visit involves a segment of television and questions relating to enjoyment, mood and personality.

**Description** In this study I am investigating the effect of psychological factors, such as personality and mood, on opinions and enjoyment of television and commercials. Around 200 individuals will participate in this study. Participants will be students enrolled in either PSY102 or PSY202 at Ryerson University. Participants will make one 60-minute visit to the "Media and Social Development" lab (South Bond Building, 2nd floor, room 244). During the individual lab session, participants will view a segment of television and will then complete a questionnaire about how much they enjoyed that segment of television, and about their mood and personality. When the participants have finished taking part, they will have an opportunity to ask questions and to learn more about the study. As a result of participating in this research, you may learn more about your opinions of television, commercials and about yourself. Potential benefits to science and society that may result from this research include useful information about the interaction between psychological factors such as personality, and the genre of television programme that is viewed, in determining people's opinions about, and enjoyment of, television and commercials. Being involved in a study may be a new experience for you, and you may feel uncomfortable answering some of the questions or viewing the images. Remember that you do not have to answer all questions and that you may discontinue participation at any time.

**Duration** 60 minutes

**Credits** 1 Credits

**Researcher** Stephanie Quigg  
Email: [Stephanie.Quigg@psych.ryerson.ca](mailto:Stephanie.Quigg@psych.ryerson.ca)

**Principal Investigator** Stephanie Quigg

## Appendix B

### Ryerson University: Consent Agreement

#### Personality and the Enjoyment of Television

You are being asked to participate in a research study. Before you give your consent to be a volunteer, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

**Investigators:** Ms. Stephanie Quigg, MA Student, Department of Psychology, Ryerson University.

Dr. Stephen Want, Assistant Professor, Department of Psychology, Ryerson University.

**Purpose of the Study:** The purpose of this study is to determine the psychological factors (such as mood and personality) that influence people's opinions about, and enjoyment of, television and commercials. About two hundred people (all at least 18 years old) will take part in this study.

**Description of the Study:** This research will take place in this lab room, at 105 Bond Street, which is a research building for psychology studies at Ryerson University. During this study, you will be asked to do the following:

- (1) Read and sign this consent form (10 minutes).
- (2) Watch approximately 25 minutes of a television segment. The television programming that you will watch will be a documentary with a commercial break, or some music videos with a commercial break.
- (3) Complete a questionnaire in which you answer questions about how much you enjoyed the segment of television you watched, and about your mood and personality. You will be presented with statements such as "I enjoyed the program that I viewed" and "Right now I feel happy." For these and other questions, you will be asked to rate how well each statement describes you. You will also be asked for some simple demographic information (e.g. age). This questionnaire takes approximately 10 minutes to complete.

It is expected that your participation in this study will take about 45 minutes in total. Each person will take part in the study individually. When you have finished taking part, you will have another opportunity to ask questions and to learn more about the study.

**What is Experimental in this Study:** None of the procedures or questionnaires used in this study are experimental in nature. The only experimental aspect of this study is the gathering of information for the purpose of analysis.

**Risks or Discomforts:** The risks of participation in this study are minimal and similar to the risks that you might experience in your everyday life. You will be asked to watch television, and reflect on your mood and personality. As a result of your participation, you might find yourself thinking more about your satisfaction with your life, your personality, or your enjoyment of

television and commercials. If at any point you feel uncomfortable during the study, you may stop participating either temporarily or permanently. Likewise, you are welcome to skip any item on the questionnaire that you do not wish to answer. In the unlikely event that you feel uncomfortable after the study, the Ryerson Centre for Student Development and Counselling offers free and confidential services to Ryerson students. The Ryerson Counselling Centre may be reached at: 416-979-5195 Monday through Friday during the summer from 9am to 5pm. More information about the Centre is available at: <http://www.ryerson.ca/counselling/>

**Benefits of the Study:** As a result of participating in this research, you may learn more about your opinions of television, commercials and about yourself. Potential benefits to science and society that may result from this research include useful information about the interaction between psychological factors such as personality, and the genre of television programme that is viewed, in determining people's opinions about, and enjoyment of, television and commercials.

**Confidentiality:** The confidentiality of records identifying you will be maintained at all times. Specifically, access to collected data will be limited to Ms. Quigg and Dr. Want. Data will be stored in a computer (accessible only via password) and the questionnaires will be secured in a filing cabinet. In addition, your name will not appear anywhere except on the consent form -- all questionnaires will be marked with an ID-number only. After completion of this study, your data will be confidentially stored for a period of at least 5 years and then destroyed.

**Walk Through Option:** If you do not want your data to be included in the study, but you still want to participate, you may perform the tasks without having your data collected. You will still receive your bonus mark (described below), even if you do not want to have your data used in the study.

**Incentives to Participate:** As an incentive to participate, you will receive one percent added to your final grade in your Introductory Psychology course for participating in this study. You may stop your participation at any time during this study and you will still receive this additional one percent added to your final grade in Introductory Psychology. It is important for you to note that you will still obtain this additional one percent if you stop your participation, or if you want to participate without having your data collected.

**Costs and/or Compensation for Participation:** There are no costs associated with your participation.

**Voluntary Nature of Participation:** Participation in this study is voluntary. Your choice of whether or not to participate will not influence your future relations with Ryerson University. If you decide to participate, you are free to withdraw your consent and to stop your participation at any time without penalty or loss of incentives. At any particular point in the study, you may refuse to answer any particular question or stop participating altogether.

**Questions about the Study:** If you have any questions about the research now, please ask. If you have questions later about the research, you may contact.

Ms. Stephanie Quigg

or

Dr. Stephen Want

Phone: 416-979-5000 ext. 4986  
7156

Phone: 416-979-5000 ext.

If you have questions regarding your rights as a human subject and participant in this study, you may contact the Ryerson University Research Ethics Board for information.

Research Ethics Board  
c/o Office of the Associate Vice President, Academic  
Ryerson University  
350 Victoria Street  
Toronto, ON M5B 2K3  
416-979-5042

**Agreement:**

Your signature below indicates that you have read the information in this agreement and have had a chance to ask any questions you have about the study. Your signature also indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate at any time. You have been given a copy of this agreement.

You have been told that by signing this consent agreement you are not giving up any of your legal rights.

\_\_\_\_\_  
Name of Participant (please print)

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Investigator

\_\_\_\_\_  
Date

Appendix C

**Debriefing Form**

At the beginning of this study, we told you that we were interested in finding out if people's personalities and mood influence how much they enjoy television. In fact, the *real* purpose of this study was to determine if TV and a commercial, specifically the Dove commercial "Evolution", can influence people's mood and opinions about themselves. More specifically, the aim of the study that you just participated in was actually to find out if the depictions of women shown on television might influence viewer's feelings about themselves and their body image. Furthermore, we investigated whether the Dove commercial "Evolution" could counteract any influence that these depictions of women on television have on women's body image. We did not tell you the real purpose of the study at the beginning because knowledge of our real hypothesis (that watching certain types of television and commercials may affect your feelings of satisfaction with your appearance) may have influenced the results you generated.

Previous researchers have investigated the body image question, and it has sometimes been found that women feel less satisfied with their appearance when they watch the thin and attractive women depicted in the media. We wanted to add to the research investigating the impact of television on women's feelings of satisfaction with their appearance and explore the affects of television commercials as potential mitigators of this relationship.

With that in mind, we have four groups of people participating in this study. People in the first group, the "Baseline group", watched part of a documentary about wildlife and commercials that did *not* feature any people. This group will provide us with data on how people generally feel about themselves and their bodies in their everyday life, when they are *not* exposed to images of thin and attractive women on television. People in our second group watched part of a documentary about wildlife and were exposed to the Dove commercial "Evolution" which featured the transformation that a model undergoes before being photographed, and of the digital modifications the pictures undergo before being presented to society. The two other groups watched some television, specifically music videos, that contained depictions of thin and attractive women. However one watched the Dove commercial "Evolution" whereas the other was presented with commercials that did *not* feature any people. The data from these four groups of participants when compared will tell us if watching television that contains depictions of thin and attractive women actually makes people feel worse about themselves and if the Dove commercial "Evolution" was able to counteract any negative affects experienced as a result of images of thin and attractive women. We chose to investigate music videos, because they typically focus quite explicitly on women's bodies and may be more likely to cause viewers to think about their own bodies and appearance than other types of television. Researchers have previously suggested that we may be more likely to compare ourselves to real people than to actors, and so watching thin and attractive real people (compared to thin and attractive actors) may be more damaging to our feelings of satisfaction with our appearance. We chose the Dove commercial "Evolution", because the aim and objective of this commercials is similar to that of the interventions used in psychological studies; that is, to expose the unreal nature of most media



9) I thought the women in the fifth music video that I viewed were attractive

1 2 3 4 5 6 7  
Not at all Extremely

10) I thought the women in the fifth music video that I viewed were thin

1 2 3 4 5 6 7  
Not at all Extremely

11) Overall I enjoyed the Music Videos that I viewed

1 2 3 4 5 6 7  
Not at all Extremely

12) I enjoyed the particular "K9-Advantix ad" that I viewed

1 2 3 4 5 6 7  
Not at all Extremely

13) I enjoyed the particular "2008 Honda Accord Sedan ad" that I viewed

1 2 3 4 5 6 7  
Not at all Extremely

14) I enjoyed the particular "Telus 2006 Fish Talk To You ad" that I viewed

1 2 3 4 5 6 7  
Not at all Extremely

15) I enjoyed the particular "Sony Bravia Paint Remastered ad" that I viewed

1 2 3 4 5 6 7  
Not at all Extremely

16) I enjoyed the particular "Dove Evolution ad" that I viewed

1 2 3 4 5 6 7  
Not at all Extremely

Appendix E

Table 1: Descriptive Statistics for Attractiveness and Thinness of Stimuli (Pre-ratings)

Variable	Mean	St. Deviation	Minimum	Maximum
<b>Attractiveness</b>				
Kate Perry	5.40	.70	4.00	6.00
Lady Gaga	4.50	.71	4.00	6.00
New Kids	6.30	.48	6.00	7.00
Timberland	6.00	.94	4.00	7.00
Keri Hilson	5.10	1.1	3.00	6.00
<b>Thinness</b>				
Kate Perry	5.50	.53	5.00	6.00
Lady Gaga	5.70	.82	4.00	7.00
New Kids	6.30	.82	5.00	7.00
Timberland	5.70	1.2	3.00	7.00
Keri Hilson	5.80	.63	5.00	7.00

Appendix F

Table 2: Descriptive Statistics for Enjoyment of Stimuli (Pre-ratings)

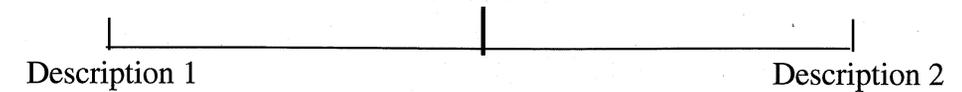
Variable	Mean	St. Deviation	Minimum	Maximum
Music Videos	4.5	1.72	1.00	6.00
K-9 Advantix Ad	5.5	.85	4.00	7.00
Honda Accord Ad	3.2	1.14	2.00	5.00
Telus Ad	5.8	1.23	3.00	7.00
Sony Bravia Ad	4.9	1.20	3.00	7.00
Dove Evolution Ad	6.8	.63	5.00	7.00

Appendix G

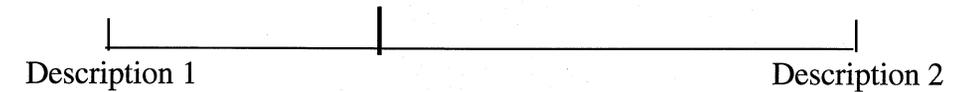
**THANK YOU FOR AGREEING TO PARTICIPATE. PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

On the following pages are pairs of descriptions. Please indicate with a straight, vertical line how much you think each description sounds like you. For example:

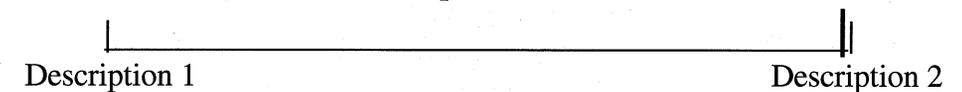
- If a pair of descriptions describe you equally well, mark the centre of the scale



- If you are slightly more like description 1 than description 2, then mark the scale slightly closer to description 1.



- If description 2 is exactly right and description 1 is not like you at all, then mark the scale right next to description 2.



Please note that questions 11-17 ask you to rate how you feel *right now*. Questions 18-22 ask you to rate your personality *in general*.

**HOW MUCH DOES EACH DESCRIPTION SOUND LIKE YOU?**

1) I am

\_\_\_\_\_

The biggest fan  
of *MuchMusic*

Not at all a fan  
of *MuchMusic*

2) I enjoyed the particular music videos that I viewed

\_\_\_\_\_

Very much

not at all

3) I thought the *people* in the music videos were

\_\_\_\_\_

Not at all true-to-life  
(nothing like people in real life)

Very true-to-life  
(a lot like people in real life)

4) I thought the *events* that took place in the music videos were

\_\_\_\_\_

Very realistic  
(a lot like events that happen  
in real life)

Very unrealistic  
(nothing like events that happen  
in real life)

5) I have seen the particular music videos (on average) that I viewed \_\_\_\_\_ times.

6) I enjoyed the *commercials* that I viewed

\_\_\_\_\_

Very much

not at all

7) I have seen the particular "K9-Advantix ad" I viewed \_\_\_\_\_ times.

8) I have seen the particular "2008 Honda Accord Sedan ad" I viewed \_\_\_\_\_ times.

9) I have seen the particular "Telus 2006 Fish Talk To You ad" I viewed \_\_\_\_\_ times.

10) I have seen the particular "Dove "Evolution ad" I viewed \_\_\_\_\_ times.

11) *Right now* I feel

\_\_\_\_\_

Happy

Unhappy

12) *Right now* I feel

\_\_\_\_\_

Worried

Relaxed

13) *Right now* I feel

\_\_\_\_\_

Confident

Insecure

14) *Right now* I feel

\_\_\_\_\_

Angry

Calm

15) *Right now* I feel

\_\_\_\_\_

Extremely dissatisfied with  
my facial appearance

Extremely satisfied with  
my facial appearance

16) *Right now* I feel

\_\_\_\_\_

Extremely dissatisfied with  
my weight and shape

Extremely satisfied with  
my weight and shape

*Right now* I feel

\_\_\_\_\_

Extremely dissatisfied with  
my overall appearance

Extremely satisfied with  
my overall appearance



25) Consider these popular television shows. On average, how many episodes of this show do you watch per week?

<i>TV show</i>	<i>Network</i>	<i>Number of full or partial episodes viewed per week</i>	<i>When was the last time you watched an episode?</i>	<i>How many episodes did you see during the past 2 weeks?</i>
Sex and the City	TBS			
American Idol	FOX			
Medium	NBC			
The Hills	CTV			
Survivor	CBS			
The Bachelorette	ABC			
Seinfeld	TBS			
Friends	TBS			
Law and Order	NBC			
America's Top Model	CW			
Criminal Minds	CBS			
Family Guy	FOX			
Desperate Housewives	ABC			
CSI	CBS			
Much On Demand	MUCH			
Simpsons	FOX			
The Office	TBS			
Grey's Anatomy	ABC			
The OC	MUCH			
Gossip Girl	CW			
One Tree Hill	CW			
Laguna Beach	CTV			
NUMB3ERS	CBS			
House	FOX			
Much Music Countdown	MUCH			
Heroes	NBC			
Extreme Makeover	ABC			
Two and a Half Men	CBS			
Ugly Betty	ABC			
Biggest Loser	NBC			
Pussycat Dolls	CW			
Bones	FOX			

**Demographic information**

Age: \_\_\_\_\_

Gender: Female \_\_\_\_\_

(please tick)

Male \_\_\_\_\_

Height: \_\_\_\_\_

Weight: \_\_\_\_\_

Ethnicity: White/Caucasian \_\_\_\_\_

(please tick

all that apply) Chinese \_\_\_\_\_

South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc) \_\_\_\_\_

Black/ African American \_\_\_\_\_

Filipino \_\_\_\_\_

Latin American \_\_\_\_\_

Southeast Asian (e.g., Vietnamese, Cambodian, Malaysian, Laotian, etc) \_\_\_\_\_

Arab \_\_\_\_\_

West Asian (Iranian, Afghan, etc) \_\_\_\_\_

Korean \_\_\_\_\_

Japanese \_\_\_\_\_

Aboriginal (e.g., North American Indian, Métis, Inuit, etc)

Other (please specify) \_\_\_\_\_

Please write a short description below of what you think this study was about (i.e. what hypothesis it was designed to investigate).

*Thank you!*

Appendix H

Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3)

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

- Definitely Disagree = 1**
- Mostly Disagree = 2**
- Neither Agree Nor Disagree= 3**
- Mostly Agree =4**
- Definitely Agree = 5**

1. TV programs are an important source of information about fashion and "being attractive."  
\_\_\_\_\_
2. I've felt pressure from TV or magazines to lose weight.  
\_\_\_\_\_
3. I do not care if my body looks like the body of people who are on TV.  
\_\_\_\_\_
4. I compare my body to the bodies of people who are on TV.  
\_\_\_\_\_
5. TV commercials are an important source of information about fashion and "being attractive."  
\_\_\_\_\_
6. I do not feel pressure from TV or magazines to look pretty.  
\_\_\_\_\_
7. I would like my body to look like the models who appear in magazines.  
\_\_\_\_\_
8. I compare my appearance to the appearance of TV and movie stars.  
\_\_\_\_\_

9. Music videos on TV are not an important source of information about fashion and "being attractive." \_\_\_\_\_

10. I've felt pressure from TV and magazines to be thin.  
\_\_\_\_\_

11. I would like my body to look like the people who are in movies.  
\_\_\_\_\_

12. I do not compare my body to the bodies of people who appear in magazines.  
\_\_\_\_\_

13. Magazine articles are not an important source of information about fashion and "being attractive." \_\_\_\_\_

14. I've felt pressure from TV or magazines to have a perfect body.  
\_\_\_\_\_

15. I wish I looked like the models in music videos.  
\_\_\_\_\_

16. I compare my appearance to the appearance of people in magazines.  
\_\_\_\_\_

17. Magazine advertisements are an important source of information about fashion and "being attractive." \_\_\_\_\_

18. I've felt pressure from TV or magazines to diet.  
\_\_\_\_\_

19. I do not wish to look as athletic as the people in magazines.  
\_\_\_\_\_

20. I compare my body to that of people in "good shape."  
\_\_\_\_\_

21. Pictures in magazines are an important source of information about fashion and "being attractive." \_\_\_\_\_

22. I've felt pressure from TV or magazines to exercise.  
\_\_\_\_\_

23. I wish I looked as athletic as sports stars.  
\_\_\_\_\_

24. I compare my body to that of people who are athletic.  
\_\_\_\_\_

25. Movies are an important source of information about fashion and "being attractive."  
\_\_\_\_\_

26. I've felt pressure from TV or magazines to change my appearance.  
\_\_\_\_\_

27. I do not try to look like the people on TV.  
\_\_\_\_\_

28. Movie stars are not an important source of information about fashion and "being attractive." \_\_\_\_\_

29. Famous people are an important source of information about fashion and "being attractive." \_\_\_\_\_

30. I try to look like sports athletes.  
\_\_\_\_\_

Appendix I  
Body Esteem Scale (BES)

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

- 
- 1. body scent \_\_\_\_\_
  - 2. appetite \_\_\_\_\_
  - 3. nose \_\_\_\_\_
  - 4. lips \_\_\_\_\_
  - 5. waist \_\_\_\_\_
  - 6. thighs \_\_\_\_\_
  - 7. ears \_\_\_\_\_
  - 8. chin \_\_\_\_\_
  - 9. body build \_\_\_\_\_
  - 10. buttocks \_\_\_\_\_
  - 11. width of shoulders \_\_\_\_\_
  - 12. arms \_\_\_\_\_
  - 13. chest or breasts \_\_\_\_\_
  - 14. appearance of eyes \_\_\_\_\_
  - 15. cheeks/cheekbones \_\_\_\_\_
  - 16. hips \_\_\_\_\_
  - 17. legs \_\_\_\_\_
  - 18. figure or physique \_\_\_\_\_
  - 19. sex drive \_\_\_\_\_
  - 20. feet \_\_\_\_\_

- 21. sex organs \_\_\_\_\_
- 22. appearance of stomach \_\_\_\_\_
- 23. sex activities \_\_\_\_\_
- 24. body hair \_\_\_\_\_
- 25. face \_\_\_\_\_
- 26. weight \_\_\_\_\_
- 27. height \_\_\_\_\_
- 28. hair \_\_\_\_\_
- 29. mouth \_\_\_\_\_
- 30. teeth \_\_\_\_\_
- 31. complexion/skin \_\_\_\_\_

## Appendix J

Table 8

*Inter-rater reliability for VAS variables*

Variable	Percentage of Agreement
Facial appearance	.994
Weight and shape	.965
Overall appearance	.997
Happy	.955
Worried	.987
Confident	1.00
Angry	.957
Agreeable	.958
Extraversion	.965
Emotional Stability	.967
Conscientiousness	.977
Openness	.973

## Appendix K

*Skewness and Kurtosis for the Independent Variables*

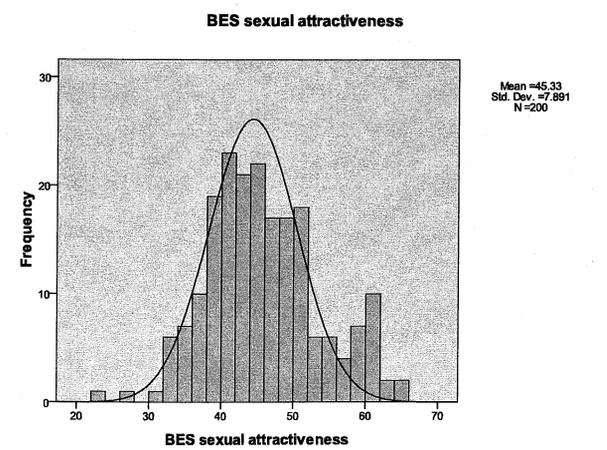
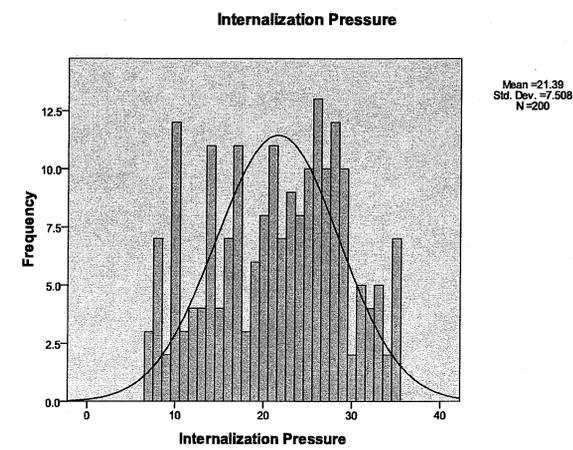
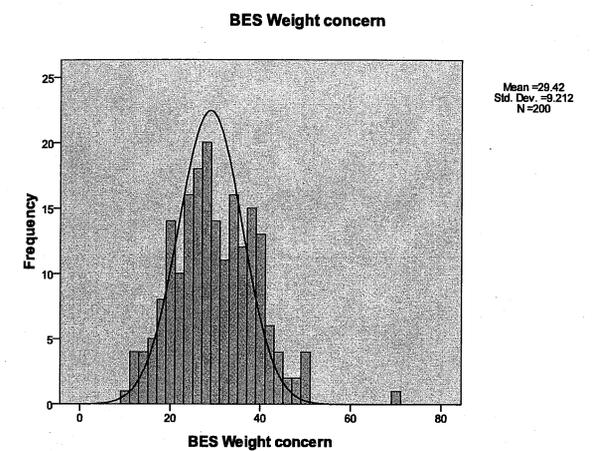
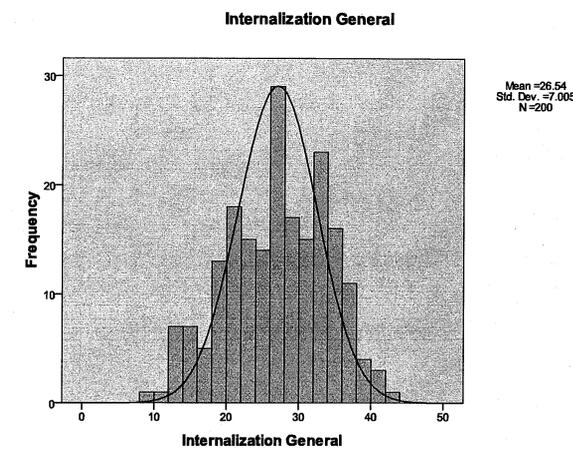
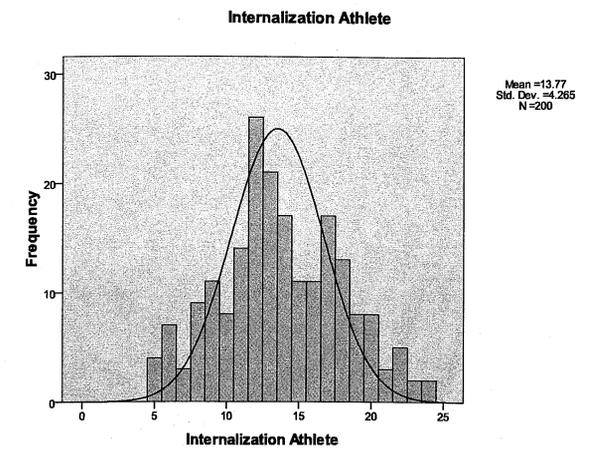
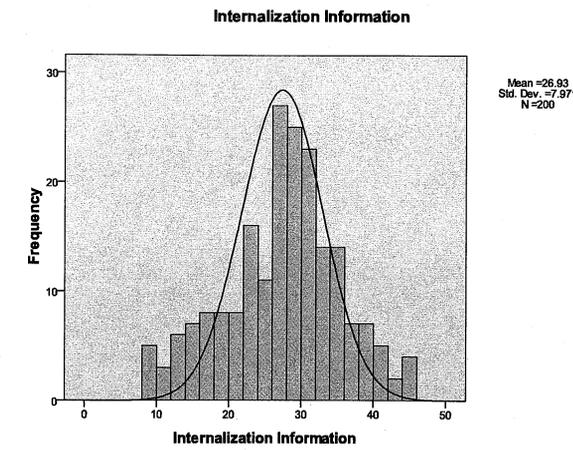
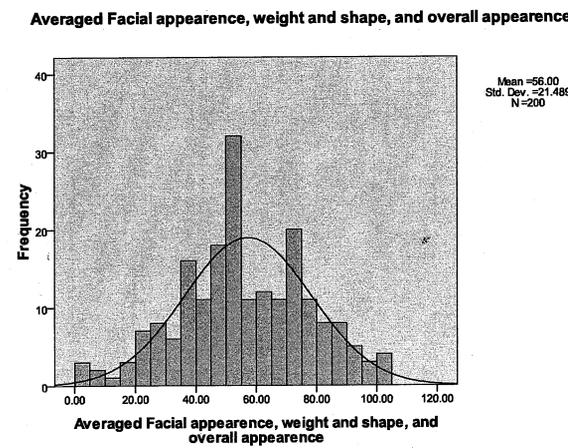
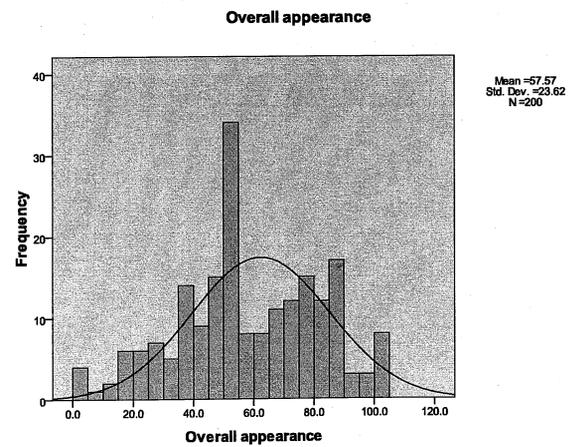
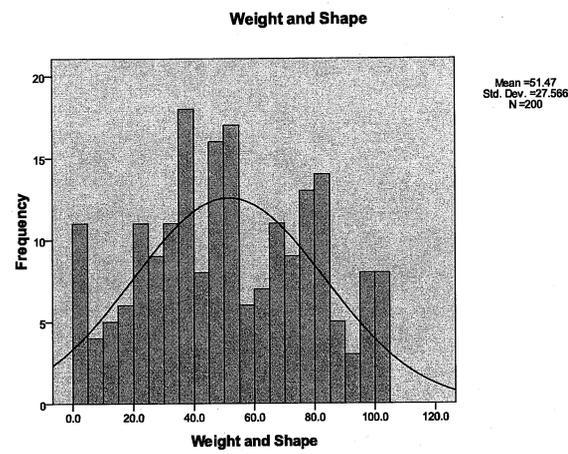
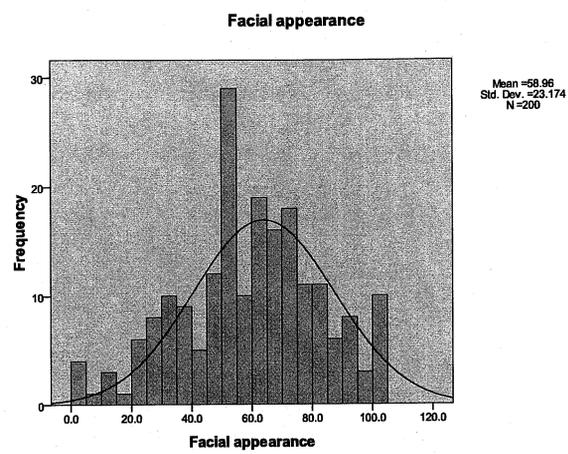
Variable	Skewness	Kurtosis
Facial Satisfaction	-1.610	-0.819
Weight and Shape Satisfaction	-0.035	-2.640**
Overall Appearance Satisfaction	-1.267	-1.520
Averaged Appearance Satisfaction	-0.506	-0.980
Internalization –General	-1.215	-1.599
Internalization –Athlete	-1.326	-1.319
Internalization –Pressure	-0.872	-2.716**
Internalization –Information	-1.139	-0.561
BES –Sexual Attractiveness	1.994*	-0.155
BES –Weight Concern	2.529*	2.392*
Age	10.570***	9.494***
BMI	7.041***	5.781***

\*Significant at  $p < .05$ . \*\*Significant at  $p < .01$ . \*\*\*Significant at  $p < .001$

Appendix L

Figure 6.

Histogram with normal curve for the independent variables: Facial Appearance, Weight and Shape, Overall Appearance, Averaged Appearance Satisfaction, SATAQ- 3 subscales (General, Athlete, Pressure and Information), BES subscales (Sexual Attractiveness and Weight Concern), Age and BMI.



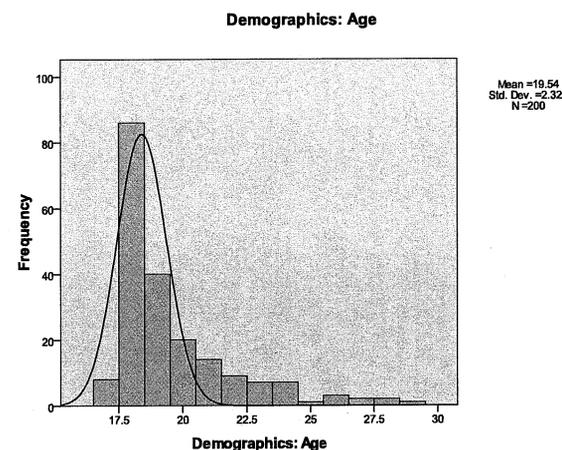
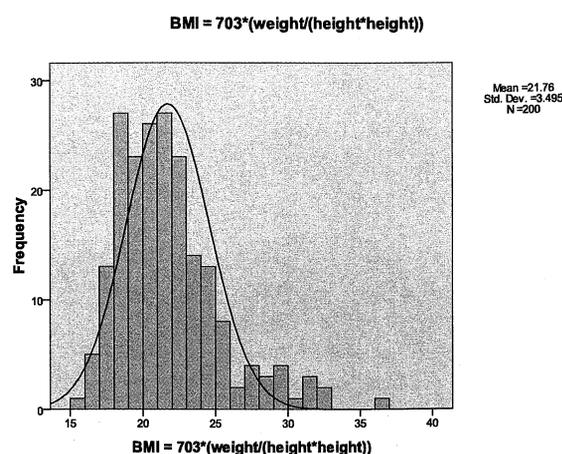
Appendix M

Multiple Regression Analysis

Three hierarchical multiple regression involving four steps were conducted on the dependent variables, facial appearance satisfaction, weight and shape satisfaction and overall appearance satisfaction to examine the influence of music videos and the intervention commercial.

A hierarchical multiple regression involving four steps was conducted to examine the risk factor of exposure to thin media images in music videos, and the protective factor of exposure to intervention commercial, with facial appearance satisfaction as the criterion. In step one, BMI and age were entered into the regression model. These two covariates were not significant ( $F=.059, p=.943$ ) accounted for 0.1% of the variance in facial appearance satisfaction. In step two the mediators were entered into the regression model, including: trait body satisfaction (both subscales of the BES Weight Concern and Sexual Attractiveness) and internalization (both General and Pressure subscales if the SATAQ-3). These factors were significant ( $F=12.945, p=.000$ ) in accounted for an additional 21.1% of the variance in facial appearance satisfaction. For third step the risk factor exposure to television programs was entered into the regression model and was not significant ( $F=1.214, p=.272$ ) accounting for 0.5% of the variance in facial appearance satisfaction. The fourth step the potential protective factor exposure to the intervention commercial was entered into the regression model and was also not significant ( $F=12.945, p=.000$ ) accounting for none of the variance in the regression model.

Hierarchical multiple regression involving four steps was conducted to examine the risk factor of exposure to thin media images in music videos, and the protective factor of exposure to intervention commercial, with weight and shape satisfaction as the criterion. In step one BMI and



age were entered into the regression model. These two covariates were significant ( $F=17.342$ ,  $p=.000$ ) predictors accounting for 15% of the variance in overall appearance satisfaction. In step two the mediators were entered into the regression model, including: trait body satisfaction (both subscales of the BES Weight Concern and Sexual Attractiveness) and internalization (both General and Pressure subscales of the SATAQ-3). These factors were significant ( $F=41.309$ ,  $p=.000$ ) and accounted for an additional 39.2% of the variance in overall appearance satisfaction. For third step the risk factor exposure to television programs was entered into the regression model and was not significant ( $F=.881$ ,  $p=.349$ ) accounting for only 0.2% of the variance in the model. For fourth step the potential protective factor, intervention commercial, was entered into the regression model and was also not significant ( $F=.976$ ,  $p=.342$ ) accounting for only 0.2% of the variation in the model.

Hierarchical multiple regression involving four steps was conducted to examine the risk factor of exposure to thin media images in music videos, and the protective factor of exposure to intervention commercial, with overall appearance satisfaction as the criterion. In step one, BMI and age were entered into the regression model. These two covariates were significant ( $F=3.406$ ,  $p=.035$ ) and accounted for 3.3% of the variance in overall appearance satisfaction. In step two the mediators were entered into the regression model, including: trait body satisfaction (both subscales of the BES Weight Concern and Sexual Attractiveness) and internalization (both General and Pressure subscales of the SATAQ-3). These factors were significant ( $F=21.476$ ,  $p=.000$ ) and accounted for an additional 29.8% of the variance in overall appearance satisfaction. For the third step the risk factor television programs was entered into the regression model and was not significant ( $F=4.333$ ,  $p=.059$ ) accounting for 1.5% of the variance in the model. The fourth step the hypothesized protective factor, intervention commercial, was entered into the

regression model and was also not significant ( $F=.223$ ,  $p=.637$ ) accounting for only 0.1% of the variance in the model.

Appendix N

Table 7

Descriptive statistics for measures

Variable	Mean	SD	Median	Range
<b>VAS items</b>				
Facial appearance	58.96	23.17	60.00	0 – 100
Weight and shape	51.47	27.57	50.00	0 – 100
Overall appearance	57.57	23.62	54.50	0 – 100
Mood	70.68	17.66	71.88	0 – 100
<b>SATAQ-3</b>				
General	26.54	7.01	27.00	9 – 45
Pressure	21.39	7.51	22.00	7 – 35
Information	26.92	7.97	28.00	9 – 45
Athlete	13.77	4.27	13.00	5 – 25
<b>BES</b>				
Sexual attractiveness	45.34	7.89	44.00	13 – 65
Weight concern	29.42	9.21	28.50	10 – 50

Appendix O

Table 6

Means and standard deviations of the VAS items and moderator variables, across the four conditions.

Variable	Mean (SD)			
	Music video conditions		Control program conditions	
	Control commercials (n = 50)	Dove commercial (n = 50)	Control commercials (n = 50)	Dove commercial (n = 50)
<b>VAS items</b>				
Facial appearance	55.54 (22.36)	59.85 (25.05)	62.64 (21.68)	57.81 (23.55)
Weight and shape	47.58 (29.26)	53.92 (28.18)	56.74 (25.80)	47.64 (26.55)
Overall appearance	53.83 (26.54)	56.80 (24.75)	63.97 (18.41)	55.67 (23.44)
<b>SATAQ-3</b>				
General	27.58 (7.43)	25.70 (6.99)	25.58 (7.52)	27.28 (5.95)
Pressure	22.34 (7.32)	20.36 (6.88)	21.00 (7.96)	21.86 (7.88)
Information	28.36 (7.30)	25.26 (8.16)	26.90 (8.12)	27.18 (8.21)
Athlete	13.86 (4.51)	13.48 (4.76)	13.50 (3.88)	14.24 (3.94)
<b>BES</b>				
Sexual attractiveness	45.72 (8.00)	46.08 (9.12)	44.74 (7.32)	44.80 (7.14)
Weight concern	29.72 (11.35)	29.60 (9.71)	30.88 (7.40)	27.46 (7.79)

Note. VAS = Visual Analog Scale, scored on 0-100 scale. SATAQ-3 = Sociocultural Attitudes Towards Appearance Questionnaire-3, subscale General scores ranged from 9-45, Athlete score ranged from 5-25, Pressure ranged from 7-35 and Information ranged from 9-45. BES = Body Esteem Scale, Sexual Attractive subscale scores ranged from 13-65 and Weight Concern subscale scores ranged from 10-50. BES subscale.

Appendix P

*Influence of Awareness.* To test whether participant’s awareness of the hypotheses of the study influenced the relationship between thin media images and appearance satisfaction 4 Analysis of Variance (ANOVA) were conducted assessing VAS facial appearance satisfaction, VAS weight and shape satisfaction, VAS overall appearance satisfaction, and mood at each level of the Aware variable (Television effects vs. Television effects on body image or appearance).

Table 7

*Awareness of Experimental Hypotheses*

Variable	Mean (SD)				Total (n = 50)
	Music video conditions		Control program conditions		
	Control commercial (n = 50)	Dove commercial (n = 50)	Control commercial (n = 50)	Dove commercial (n = 50)	
Aware					
Television effects but not in relation to body image or appearance	n = 36	n = 25	n = 38	n = 34	n = 143
Television effects on body image or appearance	n = 14	n = 25	n = 12	n = 6	n = 57

*Facial Appearance Satisfaction.* Among the participants that reported media influence when asked about the hypothesis of the study but did not mention body image or appearance satisfaction an Analysis of Variance (ANOVA) with the dependent variable VAS facial appearance satisfaction using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model was conducted. Analysis revealed no significant main effects for Program,  $F(3,$

139) = .598,  $p = .441$ ,  $\eta_p^2 = .004$ , Commercial,  $F(3, 139) = .045$ ,  $p = .832$ ,  $\eta_p^2 = .000$ . No significant interactions resulted from this analysis. For the participants that reported media influence and mentioned body image or appearance when asked about the study hypothesis an Analysis of Variance (ANOVA) with the dependent variable VAS facial appearance satisfaction using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model was conducted. Results reveal no significant main effects for Program,  $F(3, 53) = .168$ ,  $p = .683$ ,  $\eta_p^2 = .003$ , Commercial,  $F(3, 53) = .015$ ,  $p = .903$ ,  $\eta_p^2 = .000$  and no significant interactions.

*Weight and Shape Satisfaction.* Among the participants that indicated that the study hypothesis focused on media influence but did not mention body image or appearance satisfaction an Analysis of Variance (ANOVA) with the dependent variable VAS weight and shape satisfaction using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model was performed. Analysis revealed no significant main effects for Program,  $F(3, 139) = .224$ ,  $p = .637$ ,  $\eta_p^2 = .002$ , Commercial,  $F(3, 139) = .792$ ,  $p = .375$ ,  $\eta_p^2 = .006$ . No significant interactions resulted from this analysis. For the participants that reported media influence and mentioned body image or appearance when asked about the study hypothesis an Analysis of Variance (ANOVA) with the dependent variable VAS weight and shape satisfaction using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model revealed no significant main effects for Program,  $F(3, 53) = .224$ ,  $p = .683$ ,  $\eta_p^2 = .004$ , Commercial,  $F(3, 53) = .038$ ,  $p = .846$ ,  $\eta_p^2 = .001$  and no significant interactions.

*Overall Appearance Satisfaction.* Analysis of Variance (ANOVA) with the dependent variable VAS overall appearance satisfaction using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model was performed on participants that reported the focus of the study as media influence but did not mention body image or appearance satisfaction.

Analysis revealed no significant main effects for Program,  $F(3, 139) = .997, p = .320, \eta_p^2 = .007$ , Commercial,  $F(3, 139) = 2.323, p = .130, \eta_p^2 = .016$ . No significant interactions resulted from this analysis.

Analysis of Variance (ANOVA) with the dependent variable VAS overall appearance satisfaction using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model was conducted with participants that reported media influence and mentioned body image or appearance when asked about the study hypothesis. Results indicated no significant main effects for Program,  $F(3, 53) = 2.351, p = .131, \eta_p^2 = .042$ , Commercial,  $F(3, 53) = .091, p = .765, \eta_p^2 = .002$  and no significant interactions emerged.

#### Mood

Analysis of Variance (ANOVA) with the dependent variable VAS mood was conducted for participants that reported the focus of the study as media influence but did not mention body image or appearance satisfaction using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model. Analysis revealed no significant main effects for Program,  $F(3, 139) = .340, p = .561, \eta_p^2 = .002$ , Commercial,  $F(3, 139) = .319, p = .573, \eta_p^2 = .002$ . No significant interactions resulted from this analysis.

Analysis of Variance (ANOVA) with the dependent variable VAS mood was conducted using a 2 (Program: music video vs. control) x 2 (Commercial: Dove vs. control) model focusing on participants that reported media influence and mentioned body image or appearance when asked about the study hypothesis. Results indicated a significant main effect for Program,  $F(3, 53) = 6.165, p = .016, \eta_p^2 = .104$ , and Commercial,  $F(3, 53) = 4.003, p = .051, \eta_p^2 = .070$ . No significant interactions for this analysis emerged.

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