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The Self-Objectification Scale: A New Measure For Assessing Self-Objectification

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THE SELF-OBJECTIFICATION SCALE: A NEW MEASURE FOR ASSESSING SELF-OBJECTIFICATION

by

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This dissertation submitted by Sarah Marie Dahl in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.

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Sarah Dahl
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ABSTRACT

Many of the measures for self-objectification have theoretical or psychometric issues related to their use. For this reason, the development of a new measure addressing these concerns would be beneficial to the research on self-objectification. Towards this goal of developing and validating a new measure for self-objectification, the Self-Objectification Scale (SOS) was developed. The Self-Objectification Scale is the first scale to be created with two alternative forms for measuring trait and state self-objectification that have undergone analyses for reliability and validity with both men and women. A pilot study of 40 undergraduate men and women was conducted to check the formatting and clarity of the original pool of 30 SOS items, as well as, to perform preliminary analyses for internal consistency. Study 1 was carried out to finalize the items in the SOS through factor analysis and to assess the reliability and validity of the measure. Both undergraduate men (n = 111) and women (n = 150) took part in this study, retaking the Trait Form two weeks later to allow for test-retest analyses to be performed. Study 2 was conducted with undergraduate men (n = 78) and women (n = 78) to further assess the reliability and validity of the State Form; the measure was given after participants were randomly assigned to an experimental condition meant to induce a state of self-objectification. Based on the factor structure of the SOS, 15 items were retained and two subscales were created: the SOS-Success and SOS-Self-Worth. The Trait Form demonstrated good reliability and construct validity. The State Form was found to be less reliable; analyses of construct validity were unable to be performed.

CHAPTER I

INTRODUCTION

Sexual Objectification

Across the world, women are often the target of sexually objectifying messages from society. In America, these messages permeate women's daily lives. Examples of sexual objectification can be found in billboard advertisements, on television, in magazines, and in daily social encounters. For example, a company may feature their product with the image of a seductively posed female dominating the page in order to promote and sell their product in a magazine advertisement. Bartky (1990) offers a definition of sexual objectification: "*sexual objectification* [italics added] occurs when a woman's sexual parts or function are separated out from her person, reduced to status of mere instruments, or else regarded as if they were capable of representing her" (p. 35). The American Psychological Association (2007) expanded upon this description, further defining sexual objectification as when a person is not viewed as an independent human, but instead "is made into a thing for others' sexual use" (p. 2). Combining these definitions, sexual objectification occurs when an individual's value solely results from the degree to which his/her body brings profit or pleasure to others.

There are several main avenues through which women are most likely to be sexually objectified. The first of these sources is actual interpersonal interactions (Fredrickson & Roberts, 1997). Sexual harassment is one of the more extreme forms of sexual objectification, and unfortunately, its prevalence with women is rather high.

For example, in a sample of adult Canadian women, 85% reported experiencing sexual harassment at the hands of strangers and 51% reported incidences perpetrated by someone known to them (MacMillan, Nierobisz, & Welsh, 2000). Similarly high rates of sexual objectification, in the form of sexual harassment, can be found against American females as well (Swim, Hyers, Cohen, & Ferguson, 2001). When looking at a sample of female college students, Fairchild and Rudman (2008) found that 41% of the women reported receiving unwanted sexual attention from strangers at least once a month. Furthermore, in a month's time, 37.3% of the women reported being the recipients of crude jokes, 32% reported receiving catcalls, and 36% reported experiencing unwanted touching. Similar results were found by Yoon, Funk, and Kropf (2010) who discovered that over 50% of the college women had experienced sexual harassment and 43% of the women had been the victims of sexual coercion. Ninety-two percent of the women had been the targets of unwanted sexual attention.

These studies on the prevalence of sexual harassment did not report the genders of the perpetrators. However, other studies have found that men are more likely than women to be perpetrators of objectification against females (MacMillan et al., 2000; Strelan & Hargreaves, 2005). However, it is also important to be aware that sexual objectification against women does not *solely* occur at the hands of men. Women also objectified other females. In fact, women have been found to objectify other women even more than they objectify themselves (Strelan & Hargreaves, 2005).

Being sexually assaulted, receiving lewd phone calls, or hearing a sexual innuendo are examples of more overt instances of sexual objectification. However, women also experience subtle instances of sexual objectification in interpersonal

interactions. For example, other types of sexual harassment may occur when someone stands uncomfortably close to a person or leans over unnecessarily (MacMillan et al., 2000). Women have also been shown to experience negative psychological consequences upon the mere anticipation of interacting with a male stranger (Calogero, 2004). Subtle instance of sexual objectification can occur in the everyday communications between women. For example, a female can be negatively impacted when someone compliments her on her appearance (Tiggemann & Boundy, 2008) or when she overhears another woman make self-disparaging statements about her own body or appearance (Gapinski, Brownell, & LaFrance, 2003).

Not only does sexual objectification occur in real-life social encounters, but it also occurs in the visual media's depiction of interpersonal interactions (Fredrickson & Roberts, 1997). Visual media, in the form of television programs, frequently includes sexual content. On television there is a higher occurrence of sexual objectification of women compared to men (Ward, 2003), and shows airing during the primetime hours are often culprits. In one study of primetime television programs, about 25% of the sexual behaviors depicted in workplace settings were a form of sexual objectification (e.g., leering, catcalling, or ogling) (Lampman et al., 2002). In a similar study focused on primetime programming, Grauerholz and King (1997) found that 84% of the episodes sampled included at least one act of sexual harassment, averaging 3.4 instances per episode. A more recent study conducted by Montemurro (2003) showed that an average of 3.8 occurrences of harassment take place during episodes of workplace sitcoms, with male characters acting as the primary perpetrators. Unfortunately, sexual objectification also occurs in children and adolescents' primetime television programming (Ward, 1995).

Ward found that the second most common theme of the male characters' sexual remarks related to women being sexual objects.

Primetime television shows are not the only type of television programming that uses sexual objectification as material. Primetime television commercials also make use of sexually objectifying messages, again with women being sexually objectified more often than men. Lin (1998) found that actresses are more likely to be depicted in a state of undress, as sex objects, and as more physically attractive, compared to their male counterparts. Another common type of television media that makes use of women's bodies is the music video. Music videos commonly use sexual innuendos, provocative dress, and depictions of women in subservient sexual roles to men (Andsager & Roe, 2003). Just as with the other types of media, there is a gender difference in the occurrence of sexual objectification in music videos. While a larger portion of characters in music videos are men, music videos are more likely to sexually objectify women (Andsager & Roe, 2003; Turner, 2011). For example, women are shown wearing more provocative clothing, at a greater frequency, compared to men (Turner, 2011).

Sexually objectifying messages are also very prominent in print media. Not only do women receive these messages when viewing advertisements for products on television, but print advertisements rely even more heavily on objectifying imagery (Lin, 1998). On television, instances of sexual objectification occur more often within a social context. Magazine advertisements, on the other hand, are more likely to make use of individuals' bodies or body parts as the vehicle to target consumers and sell the product. The use of sexually objectifying messages in magazine advertisements is increasing. For example, after examining magazine advertisements from 1983 to 2003, Reichert and

Carpenter (2004) discovered an increase in the depiction of female models in sexual clothing from 28% of the sampled advertisements in 1983 to 49% in 2003.

The depiction of women as sex objects varies based on the demographic group targeted by the magazine, but these types of images are not just limited to men's magazines. Reichert and Carpenter (2004) found that not only did 78% of the images in men's magazines in 2003 feature women in provocative clothing, but 49% of the images in women's magazines featured women wearing sexually explicit dress. Furthermore, a study by Reichert (2003) showed that young adult (age 20-29) magazine advertisements were 65% more likely to show models in sexually provocative clothing compared to mature adult (age 40-49) magazines. Moving beyond examining provocative dress, which is only one type of sexual objectification found in print media, Stankiewicz and Rosselli (2008) coded magazine advertisements for instances of sexual objectification. They found that almost 52% of magazine ads portrayed women in a sexual way as a means to sell products. The highest rates of occurrence took place in men's magazines and adolescents' magazines. Besides advertisements, magazine covers are also created to spotlight women in sexually objectifying ways. Work by Malkin, Wornian, and Chrisler (1999) revealed that over 75% of the covers from a selection of women's magazines included messages related to bodily appearance.

The strong focus on the sexual objectification of women by researchers may lead individuals to conclude that women are the sole targets of sexual objectification. On the contrary, men can also be exposed to sexual objectification in the same ways as women: in actual social encounters, during interpersonal interactions depicted in visual media, and in advertisements. However, the occurrence of the objectification of men in these

ways is less frequent. For example, men were much less likely to report instances of sexual objectification in diary entries during a study conducted by Swim et al. (2001). And as discussed above, men are displayed in sexual attire less often than women in both television commercials (Lin, 1998) and music videos (Andsager & Roe, 2003). Just as with women, Reichert and Carpenter (2004) found an increase in the depiction of male models in sexual clothing from 11% of the sampled advertisements in 1983 to 21% in 2003; however, the male models were still portrayed in a sexual manner less often than female models. Monk-Turner et al. (2008) found few instances (2%) of the objectification of men in their sample of magazine advertisements. Finally, unlike with women's magazines, men's magazine covers do not typically include statements related to bodily appearance (Malkin et al., 1999).

Self-Objectification

The objectification theory of Fredrickson and Roberts (1997) is one of the primary theories concerning the impact that this bombardment of sexually objectifying messages from society can have on women. According to this theory, women are frequently exposed to sexually objectifying messages through three different routes, which were discussed above: actual interpersonal encounters, interpersonal interactions depicted in the media, and the use of a woman's body in an advertisement as a means to sell a product. All three of these occurrences involve a situation in which a woman is made the object of someone's gaze, either real or implied (Fredrickson & Roberts, 1997).

According to Fredrickson and Roberts (1997), women are sexualized everyday through sexually objectifying gazes. Women then become aware of this message from society that their only value comes from the profit or pleasure their bodies bring to others.

When women internalize the message that they need to view themselves as sexual objects, s*elf-objectification* occurs; in other words, they begin to view themselves in the same manner and start to objectify themselves. Non-physical positive attributes such as creativity or intelligence are no longer seen as important as appearance characteristics (Fredrickson & Roberts, 1997).

The impact of sexual objectification does not stop with women self-objectifying; unfortunately, women experience many further complications. According to the objectification theory, a woman who self-objectifies places a lot of value on her appearance. Knowing that society only values her for her body, she consequently becomes very self-conscious about her body's appearance. Fredrickson and Roberts (1997) posited that this self-consciousness results in the woman attempting to constantly monitor her appearance; for example, she may check herself in a mirror many times throughout the day. Continual body surveillance leads to an increase in body shame and appearance anxiety as she continues to worry about how she appears to others and whether she meets society's expectations. Furthermore, the mental effort put towards habitual body monitoring is theorized to result in a reduction in peak motivational states (flow experiences) and a decrease in awareness of internal bodily states. Finally, all of these psychological consequences increase the woman's risk for developing more severe mental health issues, such as eating disorders, depression, and sexual dysfunction (Fredrickson & Roberts, 1997).

The objectification theory also divides the construct of self-objectification into two forms. Self-objectification can be a stable factor, or it can be heightened in the moment by a sexually objectifying experience. Fredrickson and Roberts (1997) theorized

that all women have a fairly consistent level to which they self-objectify. This manifestation is referred to as *trait* self-objectification. Women's level of trait self-objectification is thought to be a stable characteristic over time that will vary greatly between individuals because it has developed uniquely over the course of each woman's life as they experience different degrees of sexual objectification (Fredrickson & Roberts, 1997).

S*tate* self-objectification, on the other hand, is theorized to be the immediate spike in self-objectification levels that occurs in response to being placed in a sexually objectifying situation. Fredrickson and Roberts (1997) theorized that state self-objectification occurs in most women, even low trait self-objectifying women. State self-objectification is thought to occur because the objectifying event makes it very salient to the woman that her value "only" comes from her appearance (Fredrickson & Roberts, 1997). Other researchers have disagreed with Fredrickson and Roberts' conceptualization of self-objectification as having two distinct dimensions. Moradi and Huang (2008) instead use the terms *self-reported* (trait) and *experimentally heighten* (state) self-objectification to depict that there is only one manifestation of self-objectification that is influenced and changed by the environment.

The Relationship between Sexual Objectification and Self-Objectification

At the heart of the objectification theory is the idea that exposure to sexually objectifying societal messages results in women internalizing an observer's perspective of themselves (i.e., self-objectification). This core premise has been supported by over a decade of research, with research studies demonstrating that women who are exposed to sexual objectification, from both social interactions and from the media, experience

heightened levels of self-objectification and related psychological consequences. For example, related to actual interpersonal encounters, Fairchild and Rudman (2008) found that women who experience unwanted sexual attention from strangers have increased self-objectification levels. As predicted by the objectification theory, exposure to interpersonal sexual objectification is positively correlated with body surveillance, the proposed direct manifestation of self-objectification (Kozee, Tylka, Augustus-Horvath, & Denchik, 2007; Moradi, Dirks, & Matteson, 2005).

Other more subtle types of sexual objectification in interpersonal encounters have also been shown to result in increases in self-objectification and its theorized related negative consequences. These more subtle means include just thinking about interpersonal situations or receiving commentary on one's appearance. For example, self-objectification can be induced through priming of romantic relationships (Sanchez & Broccoli, 2008). The mere anticipation of male gaze by women increases body shame, a consequence of self-objectification (Calogero, 2004). Women have also been found to experience heightened levels of body surveillance when receiving an appearance criticism *or compliment* (Calogero, Herbozo, & Thompson, 2009). Similarly, Tiggemann and Boundy (2008) found that women experienced increases in body shame after receiving an appearance compliment.

Research has also been conducted on the impact of sexual objectification portrayed in the media. Children's exposure to television and music videos is positively correlated with levels of body shame in adulthood (Slater & Tiggemann, 2006). Looking more specifically at media with sexually objectifying messages, a longitudinal study revealed that women who watched more television programs with sexually objectifying

content displayed higher levels of self-objectification a year later (Aubrey, 2006). Examining the effect of music video viewing on female adolescents, Grabe and Hyde (2009) found that girls who watched more music videos experienced negative consequences, such as lower body esteem and increases in dieting, through heightened levels of body monitoring.

Women are also strongly impacted by exposure to sexually objectifying messages in print media. Women who read more beauty magazines display higher levels of self-objectification and disordered eating behaviors (Morry & Staska, 2001), and women who read more fashion magazines display higher levels of body shame (Slater & Tiggemann, 2006). Furthermore, an experimental method that has been found to be effective in increasing state self-objectification levels in women is exposing them to sexually objectifying magazine images (Harper & Tiggemann, 2008; Tiggemann & Boundy, 2008). Viewing sexually objectifying magazine advertisements has been shown to relate to greater appearance anxiety (Monro & Huon, 2005), body dissatisfaction, negative mood (Harper & Tiggemann, 2008), and changes in eating behaviors (Monro & Huon, 2006). Moreover, something as simple as reading objectifying words can result in heightened levels of self-objectification (Roberts & Gettman, 2004).

Consequences of Self-Objectification

Research findings have supported the majority of the tenets proposed by the objectification theory concerning the process and consequences of self-objectification. One of the first studies conducted to test the theory found that self-objectification can operate both as a stable characteristic and as a situational variable (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998). Related to the immediate ramifications of women

internalizing an observer's perspective, women with higher self-objectification levels have been shown to have higher levels of body monitoring (Miner-Rubino, Twenge, & Fredrickson, 2002) appearance anxiety (Monro & Huon, 2005), and body shame (Hebl, King, & Lin, 2004). Furthermore, researchers have found that this focus on the body uses up cognitive resources and results in poorer cognitive performance on different tasks, such as math problems (Fredrickson et al., 1998) and the Stroop test (Quinn, Kallen, Twenge, & Fredrickson, 2006). As theorized, women with high trait self-objectification levels also have reduced awareness of internal emotional states (Muehlenkamp & Saris-Baglama, 2002); self-objectification and body surveillance in women are negatively correlated with flow (Tiggemann & Kuring, 2004).

Empirical support has also emerged to support the mental health risks that are proposed to result from women's self-objectification. First, related to eating disorders, women who self-objectify not only have higher rates of body shame, but they are also at an increased risk for disordered eating symptoms, including restrictive eating and bulimic behaviors (Muehlenkamp & Saris-Baglama, 2002). Overlapping closely with the proposed pathways of the objectification theory, Moradi et al. (2005) found that the relationship between appearance evaluation and eating disorder symptoms was mediated by body shame.

Also consistent with the theory, self-objectification has been found to result in appearance monitoring and more depressive symptoms in women, with this relationship mediated by levels of flow, body shame, and appearance anxiety (Szymanski & Henning, 2007). Sexual dysfunction is the last long-term negative consequence presented by the objectification theory, and as with the others, it has found empirical support. Women

who self-objectified more have higher body shame and appearance anxiety, which in turn, is related to decreases in sexual function (Steer & Tiggemann, 2008). Similarly, Sanchez & Kiefer (2007) found that women with greater body shame felt less sexual pleasure and sexual arousal.

Self-Objectification and Men

While originally, most of the self-objectification literature focused on women, researchers are now attempting to expand the objectification theory to encompass men as well. As discussed, men can be the victims of sexual objectification; however, the rate of occurrence is much less than compared to women. There is an overall trend in the literature which suggests that men show lower rates of self-objectification, body shame, and appearance monitoring compared to women. However, while gender differences have been found, many of the proposed correlates of self-objectification in women have been found to occur in men as well (Moradi & Huang, 2008).

In men, self-objectification is uniquely related to body image concerns surrounding muscularity. Grieve and Helmick (2008) found that men who displayed higher self-objectification levels were more driven to be muscular and were more likely to report symptoms of muscular dysmorphia, a disorder where the individual becomes fixated on his/her level of perceived muscle. The authors theorized that muscular dysmorphia may be the equivalent of an eating disorder for women in the objectification theory framework. This theory is supported by the fact that society sends the message to men that they are valued for their muscularity, and exposure to this message has been shown to have detrimental effects on men's body dissatisfaction (Leit, Gray, & Pope, 2002). Research in the area of self-objectification and men suggests that the theory is

applicable to both men and women; however, the relation between variables may not be identical. Most important, the major tenet of the objectification theory, that exposure to sexual objectification results in an individual internalizing an observer's perspective of him/herself, seems to apply to both genders (Moradi & Huang, 2008).

Measurement of Self-Objectification

While a plethora of research studies have emerged to support the multiple components of the objectification theory, these studies have not employed a uniform measure of self-objectification. When studying the construct of self-objectification, researchers have used measures for body monitoring, body shame, state self-objectification, trait self-objectification, and appearance orientation. Furthermore, with several of these measures there are important methodological issues to consider, including the consistency of their use from one study to the next and problems with participant error.

Trait Self-Objectification

Trait self-objectification is often measured with the Self-Objectification Questionnaire first published by Noll and Fredrickson (1998). This measure originally asked women to rank six physical appearance attributes (e.g., sex appeal) and six physical competency attributes (e.g., strength) in order of importance based on their physical self-concept. The competency sum was then subtracted from the appearance sum to result in a final score from -36 to +36. This measure showed good convergent validity in women by its large correlations with body shame (r = .51) and appearance anxiety (r = .52), constructs that self-objectification is theorized to be directly related to. According to the objectification theory, women value their appearance as important regardless of whether

they have a positive or negative self-view; consistently, the questionnaire displayed good discriminant validity via its moderate relationship with body size satisfaction (r = .46). The measure demonstrated concurrent validity for women via moderate correlations with bulimic (r = .43) and anorexic symptoms (r = .36) (Noll & Fredrickson, 1998).

Soon after its development, for formatting purposes two of the items (coloring and stamina) were removed to create a 10 item version of the measure with scores ranging from -25 to +25 (Fredrickson et al., 1998). This 10 item measure is more commonly used, and it shows similar expected correlations with other constructs proposed by the objectification theory, such as correlations with body shame (r = .32) and drive for thinness (r = .38) for women (Calogero, Davis, & Thompson, 2005). This measure has become the backbone of the self-objectification research and has been expanded for use with a variety of different populations, including men (Hebl et al., 2004), lesbian women (Hill & Fischer, 2008), gay men (Martins, Tiggemann, & Kirkbride, 2007), adolescents (Fredrickson & Harrison, 2005), older adults (Tiggemann & Lynch, 2001), African American women (Buchanan, Fischer, Tokar, & Yoder, 2008), Asian Americans (Grabe & Jackson, 2009), and British individuals (Calogero, 2009).

While this is a robust measure that supports the tenets of the objectification theory and that can be applied to studying many different populations, there are several methodological issues related to its use. First and foremost, many researchers have found that the format of this measure is confusing for participants. The instructions are lengthy, and participants often make errors when rank ordering the items, most commonly ascribing one attribute to more than one rank (Calogero, 2010). Second, the rank order format does not lend itself to analyses of internal consistency (Hill & Fischer, 2008).

Third, the content validity of this measure may be poor for men. As discussed, self-objectification in men may be related to the importance that society places on muscularity for that gender. Thus, if male participants rank the items of strength and physical fitness level as very important, their final scores should reflect higher levels of self-objectification. However, men who rank those items highly actually get a lower self-objectification score because those items are labeled as "competency" items (Calogero, 2010). This potential issue of content validity is supported by men showing overall lower scores of self-objectification on this measure compared to women (Calogero, 2009; Hebl et al., 2004). Furthermore, this measure was originally designed for use in women only (Calogero, 2010). The common use of this measure when studying self-objectification in men may actually be resulting in an inaccurate representation of the construct.

Finally, there is an issue related to variability in the administration of the measure. Not only were 2 items dropped from the originally validated measure without theoretical or statistical justification, but the formatting of the 10 item measure has been altered by later researchers (Fredrickson & Harrison, 2005). No comparison studies have been conducted to examine the reliability and validity of these different versions of the Self-Objectification Questionnaire. Overall, there are several important concerns with this measure, including participant error, its validity in men, and variability in procedures.

State Self-Objectification

State self-objectification is most commonly measured with the procedure developed by Fredrickson et al. (1998) which involves a modified version of the Twenty Statements Test (TST; Kuhn & McPartland, 1954). The participants are asked to describe how an article of clothing makes them feel about their self-identities. The

participants then fills in 20 stem statements of "I am ____." Two independent coders are used to categorize the items into six designated categories. The final score is reached by summing the number of "body shape and size" statements. Concurrent validity of the measure is supported by Hebl et al. (2004) who found that state self-objectification as measured by the modified TST mediated the relationship between experimental condition and body shame, self-esteem, and cognitive performance for both men and women.

There are many concerns surrounding the use of this modified TST to measure self-objectification. First, analyses of the reliability and validity of this measure were not reported by Fredrickson et al. (1998). The measure is used as a manipulation check to determine if the sexually objectifying experimental condition induced a state of self-objectification; however, the analyses conducted thereafter typically do not involve the measure. For example, after finding that the swimsuit condition resulted in significantly more "body and size" statements than the sweater condition, Fredrickson et al. ran a series of ANCOVAs to determine the relationship between experimental condition (the independent variable) on body shame (the dependent variable). No analyses were reported on the relationship between the modified TST and body shame. Many other researchers have conducted similar data analysis procedures (Gapinski et al., 2003; Quinn, Kallen, & Cathey, 2006; Tiggemann & Boundy, 2008). The problem with this analytic approach is that little data has emerged on the psychometric properties of the modified TST for measuring state self-objectification.

Thus, there is little reported data to support this measure's overall validity. There is an additional concern with the construct validity of this measure because the directions ask participants to state how the clothing item makes them feel about their bodies. Just

because wearing a swimsuit makes individuals focus more on their bodies does not necessarily mean that they *value* their bodies as sexual objects. This measure may not accurately capture the concept of self-objectification. The issue of construct validity is further a concern because participants can find the statement completion task difficult and the directions confusing. Answering in a certain way, such as making more body statements, could potentially represent demand characteristics rather than construct validity.

There is also inconsistency in how the final score is computed. Some researchers take an average of the two independent coders (Hebl et al., 2004) while others take the single score of one coder (Fredrickson et al., 1998; Gapinski et al., 2003). Moreover, the scoring of this measure is not consistent between studies. Some researchers measure the sum of strictly the "body and size" statements as done by Fredrickson et al. (1998) while other researchers use the sum of both the "body and size" and the "other physical appearance" statements (Tiggemann & Boundy, 2008). Other alterations have occurred related to the number of statement stems given and/or scored. The original modified TST involved 20 "I am ___" statements; however, since then researchers have used 10 statements (Martins et al., 2007) and 3 statements (Gapinski et al., 2003). As with the Self-Objectification Questionnaire, no studies have been conducted to compare the reliability of these different versions of the measure.

State self-objectification is occasionally measured using a word-stem completion task (WST). This measure involves completing words that can be finished to either be body/appearance related (e.g., muscle) or non-body/appearance related (e.g., mussel). This measure has similar issues as the modified TST. No formal studies have been

conducted to test the validity of this assessment as a measure of state self-objectification. Furthermore, the construct validity of this measure must be questioned. In the self-objectification literature, some researchers have used the WST as a measure of a different construct: "appearance schema activation" (p. 640, Martins et al., 2007). As with the modified TST, when a participant think about his /her body, it does not necessarily mean that the person views his/her worth as stemming from appearance. Finally, there are problems with the inconsistent use of the WST which further results in questionable construct validity. Other researchers, such as Quinn et al. (2006) have used this same measure to measure body thoughts *resulting from* state self-objectification. Thus, how researchers define and measure the construct captured by the WST varies greatly.

Body Surveillance

Besides the Self-Objectification Questionnaire, the most common way of assessing trait self-objectification is by measuring body surveillance. Typically this is accomplished by using the Surveillance subscale of the Objectified Body Consciousness Scale (OBC) developed by McKinley and Hyde (1996). This scale is composed of three subscales that measure individuals' experiences of their bodies as objects, which includes body surveillance, body shame resulting from internalization of cultural standards of beauty, and beliefs concerning people's ability to have control over their appearances. The Surveillance subscale is made up of eight items on a 7 point Likert-type scale with questions such as "I rarely worry about how I look to other people." The Surveillance subscale has high internal consistency ($\alpha = .89$) and test-rest reliability ($r = .79$). The moderate to strong correlations with body esteem ($r = -.39$), eating disorder symptoms ($r = .48$), public self-consciousness ($r = .46$), and appearance orientation ($r = .64$) support

its convergent validity in women. As with the SOQ, the OBC was originally developed and validated for use in women only (McKinley & Hyde, 1996).

McKinley and Hyde's (1996) theory of objectified body consciousness overlaps closely with the objectification theory posited shortly after by Fredrickson and Roberts (1997); however, there are important differences between the two theories. One of the primary differences is that McKinley and Hyde described body surveillance as monitoring and "viewing the body as an outside observer" (p. 181) and internalizing male objectifying gaze. Fredrickson and Roberts, on the other hand, distinguished self-objectification from body surveillance instead of viewing the two constructs as synonymous. Fredrickson and Roberts viewed body monitoring as the direct behavioral and cognitive manifestation of self-objectification. Thus, women value and view themselves as sex objects (self-objectification) which leads them to constantly monitor how they appear to others (body surveillance).

Unfortunately, the distinction between these theories has not consistently carried through in the assessment of self-objectification which results in confusion in the definition and measurement of these two constructs. Self-objectification researchers are using the Surveillance subscale inconsistently with one another and with the objectification theory (Calogero, 2010). For example, some researchers see the constructs as distinct and measure them accordingly (Steer & Tiggemann, 2008). Other researchers forgo the use of the Self-Objectification Questionnaire entirely and use the Surveillance subscale to solely measure self-objectification (Moradi et al., 2005). Researchers have also combined the Surveillance subscale scores with scores from the Self-Objectification Questionnaire to create a "self-objectification composite" score (p.

160, Miner-Rubino et al., 2002). This lack of clarity in defining the constructs and the overlap in the use of these assessments is especially problematic because research supports that the constructs are distinct from one another (Miner-Rubino et al., 2002; Steer & Tiggemann, 2008). As Calogero (2010) stated, "there is a distinction between the valuing of physical appearance over physical competence (as measured by the SOQ) and engagement in chronic body monitoring (as measured by the Surveillance subscale)" (p. 31).

The Surveillance subscale has also been converted into a *state* self-objectification measure by Martins et al. (2007) who changed the items to reflect the present moment. This not only results in the same problem of equating the construct of self-objectification with body surveillance, but it also results in methodological issues related to the unknown psychometric properties of using an altered version of the measure.

Appearance Orientation

The Appearance Orientation subscale of the Multidimensional Body-Self Relations Questionnaire (Brown, Cash, & Mikulka, 1990) has been used infrequently as a measure of trait self-objectification. The overall scale measures several different dimensions of body image, with the 12 Likert-type items of the Appearance Orientation subscale tapping into the emphasis and effort that individuals place on their appearances.

This measure has been viewed by some as measuring the same construct as the Self-Objectification Questionnaire (Davis, Dionne, & Shuster, 2001). However, while these constructs appear similar, examination of the items shows that the Appearance Orientation subscale is not limited to how much individuals value their appearance.

Items, such as “Before going out in public, I always notice how I look,” are more in line with aspects of body monitoring than with self-objectification (Calogero, 2010).

The Need for a New Measure

The sexual objectification of women and men results in many negative consequences that are consistent with the tenets of the objectification theory. To test this theory, researchers have relied on several main measures of self-objectification, including the Self-Objectification Questionnaire, the modified Twenty Statements Test, the word-stem completion task, the Surveillance subscale of the OBC Scale, and the Appearance Orientation subscale of the MBSRQ. However, with each of these measures there are important theoretical or psychometric issues related to their use. Many of the measures, such as the Surveillance subscale, are used inconsistently by researchers or are used to assess constructs for which they have not been validated to measure. With the SOQ and the modified TST, the two measures created specifically to assess self-objectification, there are further issues with construct validity, reliability, and participant error. Finally, there are concerns about the validity of some of the measures, such as the Surveillance subscale and SOQ, for use with men. For these reasons, the development of a new measure addressing these concerns would be beneficial to the research of self-objectification.

CHAPTER II

PILOT STUDY

Development of the Self-Objectification Scale Items

As the first step in the development and validation of a new measure for self-objectification, the initial item pool of the newly developed Self-Objectification Scale (SOS) was created. There were several issues taken into consideration based on the suggestions of Clark and Watson (1995) in developing the items: 1) items were created with a theoretical basis in the objectification theory, 2) items were constructed to broadly and comprehensively encompass self-objectification, 3) items were created to tap into different content areas of the construct, and 4) items were written in consideration of what self-objectification *is not* (e.g., body esteem or appearance monitoring). Furthermore, items were avoided that were applicable to everyone, complex, "double-barreled," or involved a negative mood term (e.g., worried or upset) (Clark & Watson, 1995).

To meet the first two goals, items were created based on descriptions of the objectification theory by Fredrickson and Roberts (1997), Moradi and Huang (2008), Miner-Rubino et al. (2002), and Calogero, Tantleff-Dunn, and Thompson (2010). In an attempt to create a measure that would be applicable to both men and women, descriptions of how the objectification theory may work differently in males (Daniel & Bridges, 2010; Grieve & Helmick, 2008; Moradi & Huang, 2008) were also taken into

account. Overall, the items were written to capture self-objectification operationally defined as people believing that their value comes from their physical appearance.

In considering the latter issues discussed by Clark and Watson (1995), several content areas were defined to further help in the development of items, including 1) thoughts about appearance and the value it has in determining 2) overall success in life, 3) social relationships, 4) work success, and 5) well-being. Items in each content area were written in both a positive and negative direction to help control for biases in participants' response styles. To address the overlap in the literature between the constructs of self-objectification and appearance monitoring, items were written so that they did not refer to worrying about one's body, appearance maintenance behaviors, or appearance monitoring behaviors. Items were also written to avoid valence laden items related to body esteem or body image (e.g., "I dislike my body"). This was done because self-objectification is theorized to operate regardless of whether a person views his/her appearance as positive or negative (Miner-Rubino et al., 2002).

Because self-objectification is theorized to be both a state and a trait variable, the instructions were altered to allow for two forms of the measure. The creation of a State Form was done to address some of the issues related to the current assessment of state self-objectification, including concerns of construct validity and confusing instructions. The Trait Form (SOS-T) was created to measure how much a person *in general* self-objectifies while the State Form (SOS-S) was created to measure how much a person is objectifying *right now*. The items themselves were identical for both forms (see Appendix A and B). Unlike the Self-Objectification Questionnaire for trait self-objectification which has rank ordering instructions that participants often find confusing,

a Likert-type format was used for the SOS items. The responses for both forms range from 1 (*strongly disagree*) to 5 (*strongly agree*) with a final score created by averaging the items for each form. A total of 30 items were created initially. These items were assessed for clarity and item content overlap by two other self-objectification researchers. Items were reworded or deleted as needed.

Method

The purpose of this pilot study was to check the formatting and clarity of the SOS items. Also, preliminary analyses were conducted to measure internal consistency. Forty undergraduate men (n = 20) and women (n = 20) were asked to take part in this pilot study using an online survey format. Participants were offered extra credit for participation. They completed the 30 items of both the Trait Form and the State Form of the Self-Objectification Scale. The two forms, as well as the items for each scale, were presented in random order to help control for potential threats to validity caused by order effects. Participants were then asked to indicate any items that were difficult to understand.

Results and Discussion

An analysis of internal consistency was conducted. The suggested cutoff r value by Field (2009) is $r > .30$. It is recommended that items which correlate to the overall measure at $r < .30$ be deleted because a correlation this low indicates that the item may not be consistent with the underlying dimension of the measure (Field, 2009). For the SOS items, five items did not meet this cutoff (See Table 1).

Table 1. Correlations between SOS Items and the Total SOS Score.

SOS-T	*r*	SOS-S	*r*
Item 1	.37	Item 1	.43
Item 2	.57	Item 2	.71
Item 3	.46	Item 3	.61
Item 4	.50	Item 4	.36
Item 5	.58	Item 5	.64
Item 6	.39	Item 6	.50
Item 7	.68	Item 7	.56
Item 8	.56	Item 8	.45
Item 9	.43	Item 9	.25*
Item 10	.51	Item 10	.41
Item 11	.52	Item 11	.40
Item 12	.48	Item 12	.72
Item 13	.08*	Item 13	.26*
Item 14	.61	Item 14	.52
Item 15	.46	Item 15	.51
Item 16	.22*	Item 16	.41
Item 17	.44	Item 17	.68
Item 18	.47	Item 18	.62
Item 19	.55	Item 19	.69
Item 20	.58	Item 20	.55
Item 21	.31	Item 21	.44

Table 1. cont.

SOS-T	*r*	SOS-S	*r*
Item 22	.33	Item 22	.30*
Item 23	.27*	Item 23	.48
Item 24	.34	Item 24	.48
Item 25	.48	Item 25	.48
Item 26	.60	Item 26	.53
Item 27	.58	Item 27	.47
Item 28	.65	Item 28	.75
Item 29	.43	Item 29	.38
Item 30	.60	Item 30	.43

*Indicates items that fell below the $r > .30$ internal consistency cutoff.

Before making a decision concerning item deletion, the items were also assessed for potentially difficult or confusing wording based on participant feedback. The frequency of participants indicating a potentially confusing item was tallied for the SOS items (see Figure 1). Of the 30 items, 8 items were indicated as confusing or difficult to understand by at least five participants. Most of these items were reworded. While item 3 was not indicated to be confusing by at least five participants, it was reworded so that it was more consistent with the construct of self-objectification. See Appendix C for the reworded SOS items.

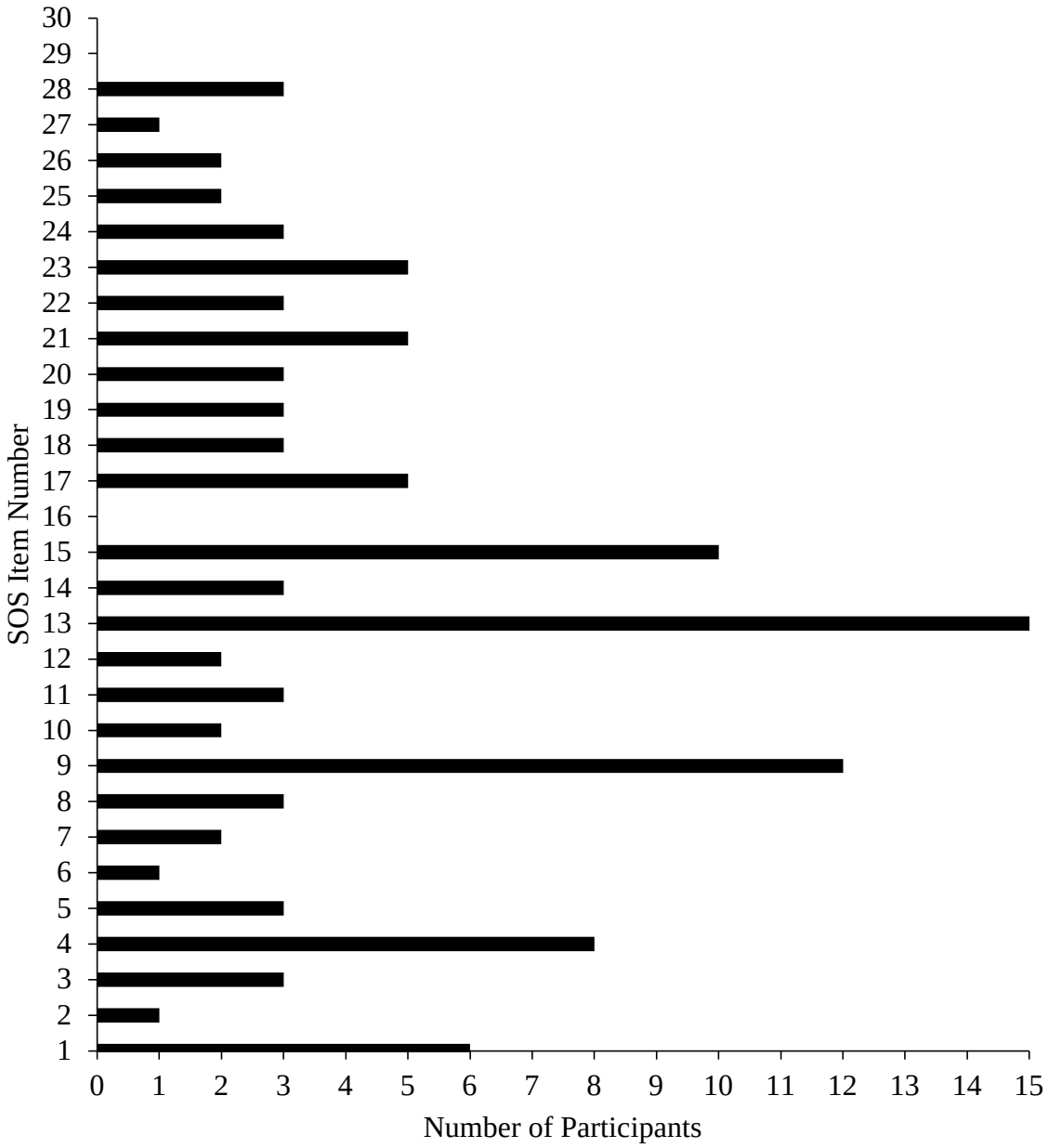

Figure 1. The Number of Participants Indicating an Item As Poorly Worded.

Of the items which demonstrated poor internal consistency, items 9 and 13 were reworded and consequently kept in the item pool. Item 22 was kept due to having an *r* value at the cut-off value ($r = .30$). Thus, of the 30 items, only items 16 and 23 were deleted from the item pool.

CHAPTER III

STUDY 1

The purpose of this study was to finalize the items in the SOS and to assess the reliability and validity of the measure. It was hypothesized that:

1. Since they were developed to measure the same construct, there should be a strong positive correlation between the SOS-T and the SOQ ($r > .50$).

2. Self-objectification is theorized to result in habitual body monitoring; these are not equivalent constructs. Thus, the positive correlation between the SOS-T and the SOQ should be significantly larger than the positive correlations between the SOS-T and measures of body monitoring. Furthermore, the positive correlation between the measures of body monitoring should be significantly larger than the positive correlations that those measures have with the SOS-T.

3. While self-objectification is theorized to impact body satisfaction, they are not synonymous constructs. A person who self-objectifies, but views his/her body in a positive way, can still experience negative consequences. Thus, the SOS-T should have only a weak to moderate negative correlation with body satisfaction ($-.10 > r < -.50$). Furthermore, the SOS-T should have a weak correlation ($r < .30$) with BMI to further support that the construct occurs across all different body shapes and sizes.

4. Because men's self-objectification has been shown to be related to their drive for muscularity, the SOS-T should be positively correlated with this construct ($r > .30$).

5. To be consistent with the objectification theory and with the existing literature, the SOS-T should be positively correlated with experiences of sexual objectification (r > .30), body shame (r > .30), and appearance anxiety (r > .30). Furthermore, the SOS-T should mediate the relationship between sexual objectification and body shame/appearance anxiety.

6. To support the trait and state distinction delineated in the objectification theory and supported by past research, there should be no significant difference between the two forms of the SOS in this study because there was no experimental exposure to sexual objectification. Furthermore, the two measures should have a strong positive relationship (r > .50).

7. Most of the measures used for this study were focused on attitudes and behaviors related to appearance; thus, there could be an issue of a systematic variance due to this underlying latent construct (Podsakoff, MacKenzie, & Podsakoff, 2012). For this reason, self-esteem was included as a variable because it does not directly involve an appearance component. Self-objectification has been shown to be negatively related to self-esteem in both men and women (Moradi & Huang, 2008). Thus, the SOS-T should be negatively correlated with self-esteem (r > -.30).

Method

Participants

Following the recommendations of Field (2009) and Mertler and Vannatta (2010), 262 college students were recruited for this study. One participant's data were deleted due to issues of response bias. This study focused on young adults because self-objectification is highest in this age group, and it declines from there with age

(Tiggemann & Lynch, 2001). Both men (n = 111) and women (n = 150) took part in this study. Ages ranged from 17 to 39 years (M =20.00, SD = 2.85). Participants identified themselves as Caucasian (n = 242), American Indian (n = 7) Black/African American (n = 2), Asian (n = 7), and other (n = 2). The average BMI was 24.34 (SD = 4.93). Participants identified themselves as heterosexual (n = 255), gay (n = 2), and bisexual (n = 3).

Measures

Demographic Information

Demographic information was collected from the participants, including age, gender, sexual orientation, and ethnicity since all of these variables have been shown to potentially impact self-objectification levels (Moradi & Huang, 2008).

Self-Objectification Scale

The Self-Objectification Scale's (SOS) revised item pool of 28 items was used to measure how much individuals value their appearances. Both the Trait Form and the State Form were given. The Likert-type responses range from 1 (*strongly disagree*) to 5 (*strongly agree*) for questions such as "How my body looks will determine how successful I am in life." A total score is obtained by averaging the items separately on each form.

Interpersonal Sexual Objectification Scale

Frequencies of sexually objectifying events in women was measured using the Interpersonal Sexual Objectification Scale (ISOS) (Kozee et al., 2007). This is a 15 item Likert-type measure. Respondents are asked to report how often each objectifying event was experienced by them within the past year. Responses range from 1 (*never*) to 5

(*almost always*) for questions such as "How often have you heard a rude, sexual remark made about your body?" This questionnaire includes two subscales: Body Evaluation and Unwanted Explicit Sexual Advances. Scores are determined by taking the average of the items and range from 1 to 5. This scale measures varying degrees of sexually objectifying experiences from sexualized gaze to unwanted physical sexual advances, such as pinching or fondling. The scale, however, does not measure extreme forms of sexual objectification like sexual abuse. The ISOS has high internal consistency ($\alpha = .92$) and has demonstrated convergent, discriminant, and incremental validity (Kozee et al., 2007). In the current study, the ISOS ($\alpha = .91$) and its two subscales, Body Evaluation ($\alpha = .88$) and Unwanted Explicit Sexual Advances ($\alpha = .87$), displayed good internal reliability.

Self-Objectification Questionnaire

The current version of the Self-Objectification Questionnaire (SOQ) devised by Noll and Frederickson (1998) was used to measure trait self-objectification. For this questionnaire, the participant is asked to rank a list of 10 attributes (e.g., weight) according to how much each impacts the person's physical self-concept. The respondent ranks the attributes from *most important* (9) to *least important* (0), and the respondent can only assign one attribute to each level of importance. For scoring, the 10 attributes are divided into two categories, either appearance-related attributes (e.g., sex appeal) or competence-related attributes (e.g., health). Next, the scores for the two types of attributes are summed, and the total competence score is subtracted from the total appearance score. Final scores can range from -25 to +25 with higher scores corresponding to higher levels of self-objectification.

This questionnaire has demonstrated adequate concurrent validity in both men (Martins et al., 2007) and women (Fredrickson et al., 1998). The measure has also been shown to have sufficient test-retest reliability in women (Aubrey, 2006; Miner-Rubino et al., 2002).

Surveillance Subscale

The Surveillance subscale of the Objectified Body Consciousness (OBC) Scale (McKinley & Hyde, 1996) was used to measure participants' habitual body monitoring. This subscale is composed of eight item with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) for statements such as "I rarely worry about how I look to other people." An overall score is obtained by taking the average of the items. The Surveillance subscale has displayed good internal consistency and convergent validity in women (McKinley & Hyde, 1996) and in men (Martins et al., 2007). The Surveillance subscale demonstrated good internal validity in the current study ($\alpha = .85$)

Body Shame Subscale

Body shame is also theorized to result when individuals self-objectify. Thus, the Body Shame subscale of the Objectified Body Consciousness Scale was used (McKinley & Hyde, 1996). This subscale is composed of eight items. The responses range from 1 (*strongly disagree*) to 7 (*strongly agree*) for statements such as "I would be ashamed for people to know what I really weigh." The overall score is found by taking the average of the items and ranges from 1 to 7. The Body Shame subscale has displayed good internal consistency and convergent validity in women (McKinley & Hyde, 1996) and in men (Martins et al., 2007). The questionnaire had high internal reliability for this study ($\alpha = .85$).

Appearance Anxiety Questionnaire

The extent to which the participant experiences anxiety concerning his/her appearance, a theorized consequence of self-objectification, was measured using the Appearance Anxiety Questionnaire (AAQ) (Dion, Dion, & Keelan, 1990). This is a 30 item Likert-type scale; responses range from 1 (*never*) to 5 (*almost always*) for statements such as "I wish that I were better looking." The score is obtained by taking the average of the items; it ranges from 1 to 5. The Appearance Anxiety Questionnaire has demonstrated good internal consistency, test-retest reliability, and convergent validity in both men and women (Dion et al., 1990). In the current study, this questionnaire showed high internal reliability ($\alpha = .91$).

Body Mass Index

Height and weight information were collected by self-report to calculate participants' body mass index (BMI) using the formula weight/height^2 (kg/m^2) (Garrow & Webster, 1985).

Drive for Muscularity Scale

Researchers have theorized that men are exposed to a unique sexually objectifying message related to the value of a muscular appearance. Thus, the Drive for Muscularity Scale (DMS) developed by McCreary and Sasse (2000) was used to measure how much men desire to be muscular. The 14 item scale has two subscales. The Muscle-Oriented Body Image subscale measures the participants' attitudes towards muscularity with items such as "I think that my arms are not muscular enough." The Muscle-Oriented Behavior subscale assesses muscle building behaviors such as "I use protein or energy supplements." Responses range from 1(*never*) to 6 (*always*). Scores on the

subscales and an overall score are calculated by taking the average of the items. The DMS has demonstrated high internal consistency (α = .87) for men. The DMS showed adequate factorial validity for the DMS and its subscales (McCreary, Sasse, Saucier, & Dorsch, 2004). In this study, the DMS demonstrated good internal reliability for men (α = .84). The Muscle-Oriented Body Image subscale (α = .88) and the Muscle-Oriented Behavior subscale (α = .80) both demonstrated adequate internal reliability.

Body Areas Satisfaction Scale

The Body Areas Satisfaction Scale (BASS) was used to measure the extent of participants' overall body satisfaction. This is a subscale of the Multidimensional Body-Self Relations Questionnaire (MBSRQ) developed by Brown et al. (1990). The BASS is made up of nine items. A participant rates his/her satisfaction with different aspects of his/her body such as the "face" or "upper torso." Responses range from 1 (*very dissatisfied*) to 5 (*very satisfied*). An overall score is determined by averaging the items (Cash, 2000). This measure has been found to be valid and reliable for both men and women (Brown et al., 1990). The BASS displayed good internal reliability in the current study (α = .82).

Appearance Orientation Subscale

The Appearance Orientation subscale is a subscale of the Multidimensional Body Self Relations Questionnaire (MBSRQ) developed by Brown et al. (1990). The subscale is thought to measure the importance of appearance to an individual (e.g., self-objectification); however, examination of the items suggests that the subscale is more a measure of cognitive and behavioral investment in one's appearance (Calogero, 2010). The Appearance Orientation subscale is made up of 12 Likert-type items for statements

such as “Before going out in public, I always notice how I look.” Responses range from 1 (*definitely disagree*) to 5 (*definitely agree*). An overall score is determined by averaging the items (Cash, 2000). This measure has been found to be valid and reliable for both men and women (Brown et al., 1990). The Appearance Orientation subscale showed high internal reliability in the current study ($\alpha = .87$).

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965) was used to assess self-esteem. This is a 10 Likert-type item measure, made up of 5 positive and 5 negative self-esteem items. Responses range from 1 (*strongly disagree*) to 4 (*strongly agree*) for questions such as “On the whole, I am satisfied with my life.” Negative items are reversed scored, and an overall score (ranging from 0 to 4) is determined by averaging the items, with higher scores indicating higher self-esteem. The RSES has demonstrated good internal consistency, test-retest reliability, and concurrent validity in both men and women (Robins, Hendin, & Trzesniewski, 2001). For this study, the scale showed high internal reliability ($\alpha = .91$).

Procedure

As with the pilot study, this study was also conducted using an online survey format. Researchers have found little difference between the data received in online versus paper format of questionnaires, indicating that the online format is a reliable form of data collection (Denscombe, 2006; Gosling, Vazire, Srivastava, & John, 2004; Miller, Neal, Roberts, Baer, Cressler, Metrik, et al., 2002; Salgado & Moscoso, 2003). Participants were offered extra credit for participation. The questionnaires were given to participants in random order to help control for potential threats to validity caused by

order effects. Moreover, the items of the two forms of the SOS were presented in random order. Only women completed the Interpersonal Sexual Objectification Scale, and only men completed the Drive for Muscularity Scale. Individuals were contacted two weeks after their participation to complete the SOS-T again to allow for the assessment of test-retest reliability. A minimum75% response rate cutoff was set for analyzing test-retest reliability to help control for potential issues resulting from attrition.

Results and Discussion

Pre-Analysis Data Screening

Frequency distributions were conducted to identify potential errors in the data. Second, the primary variables and demographic variables were converted to *z* scores to identify outliers, defined as values exceeding +4 or -4 (Mertler & Vannatta, 2010). An outlier was found for sexual objectification; however, this participant's data were removed because of potential issues with response bias. For most of the measures (i.e., appearance orientation, body satisfaction, appearance anxiety, sexual objectification, and state self-objectification) the participant answered the highest score on the Likert scale for all items in the measure, including ones that were written to be reverse scored.

Outliers were found for the following demographic variables: BMI and age. Because there was no indication that these outlying data were errors, invalid, or not from the population intended to sample, the data were kept, and later analyses with these variables were run with both the inverse transformed and untransformed variable. No significant changes were found between the analyses with the transformed and untransformed variable; thus, results were only reported for the untransformed data.

Analysis of Item Distributions and Correlations

Before conducting the factor analysis, all the items were analyzed to assess their response distribution across participants. Non-normally distributed and unbalanced items were removed because they offer little in variability between participants and because they can cause the factor analysis solution to be unreliable. Items were retained which showed a wide variability in responses because these items are good at distinguishing participants on the continuous dimension of the construct (Clark & Watson, 1995). Items with very small inter-item correlations were also removed because this indicates that the item is not related to the same underlying dimension as the other items (Field, 2009).

First, univariate normality was assessed for all items. Items were considered non-normal when the skewness or kurtosis values exceeded +1 or -1 (Mertler & Vannatta, 2010). Analyses were run for both the state and trait items of the SOS. Item 22 was deleted because of skewness and kurtosis values outside of this acceptable range (SOS-T kurtosis = 1.63; SOS-S kurtosis = 1.58, skewness = -1.01). All other items had values indicating that their distributions were normal. Frequency distributions were also assessed to remove any unbalanced items where most individuals gave the same response. Items were removed if 50% or more of participants answered the same. Thus, the following item numbers were removed: 1, 4, 6, 11, 21, and 24. Item 14 was deleted because no participants responded "5" (*strongly agree*) on the SOS-T or the SOS-S. Finally, items 10 and 25 were removed because they demonstrated a high quantity (> 66%) of low inter-item correlations ($r < .30$) on either the SOS-T or the SOS-S. The remaining 18 items were used for the factor analysis.

Exploratory Factor Analysis

A principle component analysis with oblique rotation (direct oblimin) was conducted on the 18 items of the Self-Objectification Scale with a combined sample of both men and women. An oblique rotation was chosen because the underlying components of the scale were expected to be related (Field, 2009). To ensure that the SOS-S and SOS-T reflected the same construct, the principle component analysis was run separately on both forms.

The reliability of the component structure was assessed following the recommendations of Field (2009). The Kaiser-Meyer-Olkin values for the SOS-T (KMO = .92) and for the SOS-S (KMO = .93) were superb (close to 1). All KMO values for individual items were > .88 which is above the minimum level of > .50. These results indicated that the sample size was sufficient for providing a reliable component structure. Bartlett's test of sphericity was significant for both the SOS-T, χ^2 (153) = 2039.60, $p <$ .001, and the SOS-S, χ^2 (153) = 2127.98, $p < .001$. These values indicated that the relationships between variables were adequate in size for conducting the principle component analysis (Mertler & Vannatta, 2010).

The components were evaluated based on five different criteria: eigenvalue, variance, scree plot, parallel analysis, and residuals (Field, 2009; Mertler & Vannata, 2010). For both the SOS-T and the SOS-S, the principle component analysis produced a three component solution. Initial analyses examining eigenvalues suggested the retention of three components with eigenvalues greater than Kaiser's criterion of 1 (see Table 2).

Table 2. Eigenvalues and Variance Accounted for by Components in Principle Component Analysis.

	SOS-T		SOS-S	
Component	Eigenvalue	% of Variance	Eigenvalue	% of Variance
1	7.38	41.00	7.65	42.48
2	1.80	9.98	1.65	9.15
3	1.07	5.93	1.17	6.48

No components accounted for at least 70% of the total variance; thus, this criterion was not helpful in determining the final solution. Examination of the scree plot indicated that only components 1 and 2 should be retained (see Figure 2).

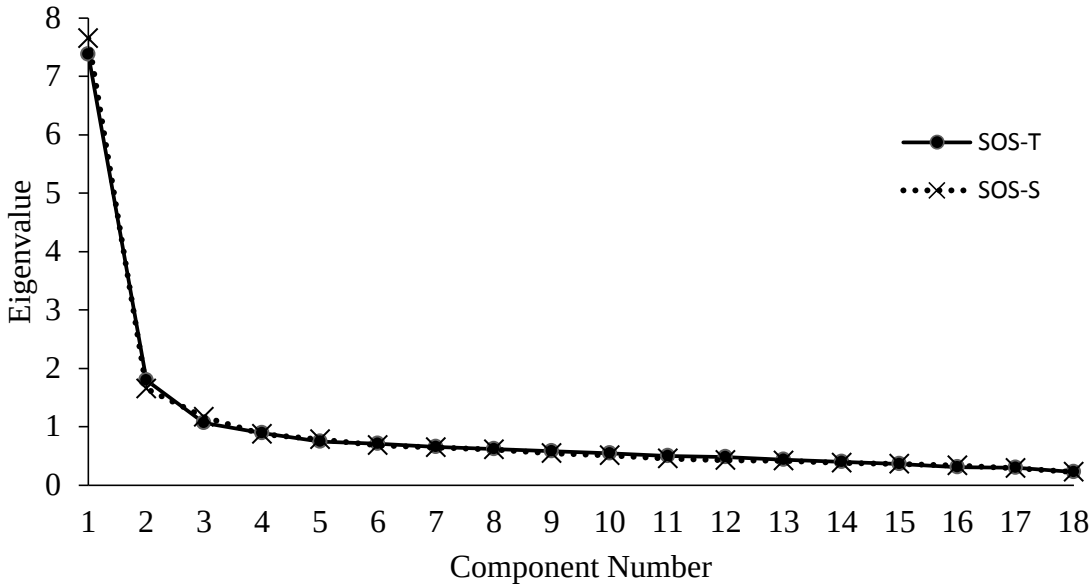

Figure 2. Scree Plot of Eigenvalues from Principle Component Analysis.

The scree plot criterion was considered to be more accurate than the eigenvalue criterion because the sample size was larger than 250, most of the communalities were greater than .30, and the average communality was less than .60 (Mertler & Vannatta, 2010).

The two component solution was confirmed by a parallel analysis. Parallel analysis has been argued to be much more accurate for determining the number of components (Hayton, Allen, & Scarpello, 2004). Only for components 1 and 2 for both the SOS-T and the SOS-S were the actual eigenvalues greater than the average eigenvalues (see Table 3).

Table 3. Actual Eigenvalues from Principle Component Analysis and Average Eigenvalues from Parallel Analysis.

	Actual Eigenvalue		
Component	SOS-T	SOS-S	Average Eigenvalue
1	7.38	7.65	1.49
2	1.80	1.65	1.39
3	1.07	1.17	1.32

The principle component analyses were then rerun to only allow for a two component solution. The model fit was then assessed by examining the reproduced correlations. For the two component, there were 63 residuals (41%) for the SOS-T and 62 residuals (40%) for the SOS-S that were greater than .05 which falls below the 50% cutoff and suggests that the models can be considered a good fit to the data.

The factor loadings for the SOS-T and SOS-S after rotation can be found in Table 4. The cutoff was set at .40 for factor loadings and .35 for cross loadings.

Table 4. Factor Loadings from the Pattern Matrices of the SOS-T and the SOS-S.

	S0S-T		SOS-S	
Item	1	2	1	2
2. How my body looks will determine how successful I am in life.	**.88**	-.04	-.02	**-.86**

Table 4. cont.

	S0S-T		SOS-S	
Item	1	2	1	2
17. My future financial stability is determined by my looks.	**.87**	-.13	-.07	**-.87**
12. My level of sexual appeal will determine my future financial success.	**.86**	-.11	-.15	**-.86**
3. My ability to do well at my job is based on how others view my physical appearance.	**.75**	.00	.02	**-.76**
20. My physical appearance is closely related to the power that I hold in society.	**.73**	.05	.28	**-.60**
26. Being physically attractive will determine how many friends I have.	**.61**	.18	.35	**-.41**
19. How my body appears to others will determine my life experiences.	**.60**	.13	.28	**-.55**
8. I do not need to look good to achieve my goals in life.*	**.56**	-.03	.07	**-.54**
5. I need to look my best because others will notice.	**.48**	.10	.34	-.21
15. Life will be good if I am sexually appealing.	**.40**	.29	.33	-.36
7. I value my body's appearance more than its strength and stamina.	-.14	**.86**	**.82**	.10
29. My body's abilities are more important than my body's appearance.*	-.12	**.74**	**.74**	.10
28. I value my physical appearance over my physical comfort.	.03	**.71**	**.65**	-.05
13. The aspects of my body that cannot be viewed by others (i.e., my health, energy level, physical abilities) are the ones I value most.*	.04	**.65**	**.76**	.10
9. The aspects of my body that can be viewed by others (i.e., my weight, facial features, shape) are the ones I value most.	.18	**.63**	**.68**	-.03
27. My sense of self-worth is based largely on my physical appearance.	.28	**.55**	**.67**	-.15
30. My happiness is dependent on my physical appearance.	.32	**.53**	**.64**	-.15

Table 4. cont.

	S0S-T		SOS-S	
Item	1	2	1	2
18. It is important that others find me physically appealing.	.36	.38	**.59**	-.13

Factor loadings above the .40 cutoff after rotation are bolded. *Indicates reverse scored items.

For the SOS-T, two components were evident. The items loading on the first component suggested that it represented the belief that physical appearance is important in determining one's life course (e.g., "My level of sexual appeal will determine my future financial success." and "My physical appearance is closely related to the power that I hold in society."). This appeared to be a more extrinsic dimension: valuing physical appearance because of what it can gain a person. The items loading on the second component suggested that it represented the belief that appearance is important to the person's self-worth (e.g., "My sense of self-worth is based largely on my physical appearance." and "I value my physical appearance over my physical comfort."). This appeared to be a more intrinsic dimension: valuing physical appearance in itself.

When comparing factor loadings between the two forms, there was a large amount of overlap of both magnitude and content between the SOS-S and SOS-T factor loadings. For the first SOS-T component, the SOS-S second component shared 8 out of the 10 items. For the second SOS-T component, the SOS-S first component shared all 7 items, with an additional item loading. Items 5, 15, and 18 were not consistent between the two forms. To allow the two scales to have a similar factor structure, items 5, 15, and 18 were removed from the SOS. The final 15 items of the SOS were analyzed with a principle component analysis to confirm the equivalent factor structure between the two

forms. Again, the principle component analysis was run separately on both forms with a combined sample of men and women. The analysis was set to only allow for a two component solution.

The Kaiser-Meyer-Olkin values for the SOS-T (KMO = .93) and for the SOS-S (KMO = .92) were superb. All KMO values for individual items were > .88 which is above the minimum level of > .50. Bartlett's test of sphericity was significant for both the SOS-T, χ^2 (105) = 1699.90, $p < .001$, and the SOS-S, χ^2 (105) = 1810.41, $p < .001$. Thus, the data met the criteria to perform a reliable principle component analysis.

The components and the percentage of variance accounted for can be found in Table 5.

Table 5. Eigenvalues and Variance Accounted for by Components in the Final Principle Component Analysis.

	SOS-T		SOS-S	
Component	Eigenvalue	% of Variance	Eigenvalue	% of Variance
1	6.48	43.17	6.75	45.00
2	1.78	11.86	1.62	10.79

For the SOS-T, the two components accounted for 55.04% of the variance and for the SOS-S, the two components accounted for 55.78% of the variance. The factor loadings for the SOS-T and SOS-S after rotation can be found in Table 6. The cutoff for factor loadings was set at .40 and the cutoff for cross loadings was set at .35. As can be seen in Table 6, the final principle component analyses resulted in similar factor structures for both the SOS-T and the SOS-S.

Table 6. Final Factor Loadings from the Pattern Matrices of the SOS-T and the SOS-S.

	S0S-T		SOS-S	
Item	1	2	1	2
2. How my body looks will determine how successful I am in life.	**.88**	-.02	**.87**	-.03
17. My future financial stability is determined by my looks.	**.87**	-.10	**.87**	-.06
12. My level of sexual appeal will determine my future financial success.	**.85**	-.09	**.86**	-.15
3. My ability to do well at my job is based on how others view my physical appearance.	**.75**	.03	**.77**	.01
20. My physical appearance is closely related to the power that I hold in society.	**.71**	.07	**.63**	.25
26. Being physically attractive will determine how many friends I have.	**.60**	.21	**.45**	.31
19. How my body appears to others will determine my life experiences.	**.60**	.16	**.57**	.26
8. I do not need to look good to achieve my goals in life.*	**.55**	-.02	**.56**	.06
7. I value my body's appearance more than its strength and stamina.	-.15	**.85**	-.07	**.81**
29. My body's abilities are more important than my body's appearance.*	-.10	**.74**	-.08	**.77**
28. I value my physical appearance over my physical comfort.	.02	**.72**	.08	**.64**
13. The aspects of my body that cannot be viewed by others (i.e., my health, energy level, physical abilities) are the ones I value most.*	.06	**.66**	-.08	**.80**
9. The aspects of my body that can be viewed by others (i.e., my weight, facial features, shape) are the ones I value most.	.17	**.64**	.07	**.65**
27. My sense of self-worth is based largely on my physical appearance.	.29	**.56**	.20	**.63**
30. My happiness is dependent on my physical appearance.	.31	**.53**	.20	**.61**

Factor loadings above the .40 cutoff after rotation are bolded. *Indicates reverse scored items.

Again, the first component appeared to represent an extrinsic/success dimension of self-objectification; whereas, the second component appeared to represent an intrinsic/self-worth dimension. These results justified the creation of two subscales for the Self-Objectification Scale: the Success subscale (items 2, 3, 8, 12, 17, 19, 20, and 26) and the Self-Worth subscale (items 7, 9, 13, 27, 28, 29, and 30). See Appendix D for the final version of the SOS. The SOS-T and SOS-S were examined for normality by looking at skewness and kurtosis values. The overall scales and subscales all fell within the +1 or -1 skewness and kurtosis value criteria for normality (Mertler & Vannatta, 2010).

Reliability of the SOS

An analysis of internal consistency was conducted to determine if there was adequate consistency and inter-correlation among the SOS items retained from the factor analysis. For the scale to be considered internally consistent there should be a Cronbach's alpha of .80 (Clark & Watson, 1995). The SOS and its subscales for both the SOS-T and the SOS-S displayed good internal consistency (see Table 7).

Table 7. Measure of Internal Consistency (Cronbach's Alpha) for SOS.

Scale	SOS-T	SOS-S
SOS-Total	.90	.91
SOS-Success	.88	.88
SOS-Self-Worth	.84	.85

As another measure of internal consistency and unidimensionality, it is recommended that the individual inter-item correlations should be "moderate in magnitude and should cluster narrowly around the mean" (p. 316) with values ranging

between .15 and .50 (Clark & Watson, 1995). The SOS-Self-Worth adhered close to this recommendation (see Table 8), evidence of the scale's unidimensionality. While the SOS-Success did not fit as close to the recommendation, the majority of the inter-item correlations fell within the recommended range for evidence of unidimensionality, and it displayed a smaller range compared to the SOS-Total. The SOS-Total showed the widest spread of inter-item correlations which was consistent with its multidimensional factor structure. Overall, these analyses indicated that the SOS and its subscales displayed good internal consistency and expected dimensionality.

Table 8. Measure of Unidimensionality for SOS Using Inter-Item Correlations.

Scale	*M*	*SD*	Range
SOS-T			
SOS-Total	.38	.12	$.10 \geq r \leq .69$
SOS-Success	.49	.11	$.29 \geq r \leq .69$
SOS-Self-Worth	.43	.05	$.35 \geq r \leq .57$
SOS-S			
SOS-Total	.41	.10	$.17 \geq r \leq .68$
SOS-Success	.49	.10	$.32 \geq r \leq .68$
SOS-Self-Worth	.45	.07	$.36 \geq r \leq .59$

Test-retest reliability of the SOS-T was also established. Of the original 261 participants (Time 1), 80 men and 112 women completed the SOS-T after a two week interval (Time 1-2). Thus, there was a 74% response rate. Because the response rate was very close to the 75% cutoff set a priori, test-retest reliability was still analyzed.

One-way ANOVAs, chi-square tests, and Fisher's exact tests were run to help account for any potential differences due to attrition. A Bonferroni alpha level adjustment was used for these analyses. Because the Bonferroni adjustment is a very conservative approach, the adjustment was calculated with $\alpha = .10$ to reduce the loss of power (Kazdin, 2003). Thus, for the 13 comparison analyses, alpha was set at .008. First the assumptions of the one-way ANOVA were tested by examining for normality (< +/- 1 criteria) and homogeneity of variance (Levene's test and Brown-Forsythe test). Both age and BMI were found to be non-normal; however, no significant changes were found between the analyses run with the inverse transformed and untransformed data so only the untransformed results are presented. There were no significant differences found between the means for Time 1 and Time 1-2 individuals for age, BMI, body satisfaction, body shame, body surveillance, appearance anxiety, drive for muscularity, sexual objectification, self-objectification, self-esteem, or appearance orientation ($p > .05$) (see Table 9). Thus, there was no evidence to suggest a bias in the attrition rate based on these factors.

Table 9. Variable Scores for Time 1 and Time 1-2 Individuals.

	Mean		Standard Deviation	
Variable	Time 1	Time 1-2	Time 1	Time 1-2
Age	19.88	20.04	2.69	2.91
BMI	24.49	24.29	4.23	5.17
Body Satisfaction	3.29	3.35	.65	.68
Body Shame	3.39	3.40	1.21	1.22
Body Surveillance	4.36	4.25	.98	1.17

Table 9. cont.

	Mean		Standard Deviation	
Variable	Time 1	Time 1-2	Time 1	Time 1-2
Appearance Anxiety	2.71	2.68	.58	.63
Appearance Orientation	5.36	5.31	.62	.69
Drive for Muscularity	2.86	3.03	.77	.72
Self-Obj. (SOQ)	-5.46	-7.97	13.71	13.76
Self-Obj. (SOS-T-Total)	2.46	2.41	.58	.66
Self-Obj. (SOS-S-Total)	2.41	2.44	.59	.69
Self-Esteem	1.98	1.90	.41	.54
Sexual Objectification	2.32	2.23	.53	.56

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

Using a chi-square test ($\alpha = .008$), no significant differences were found between Time 1 and Time 1-2 individuals for gender [χ^2 (1, N = 261) = 1.08, p = .30]. The test fulfilled the assumption of minimum expected cell frequency with all cells having an expected frequency greater than 5 (Pallant, 2005). The chi-square tests for ethnicity and sexual orientation violated the assumption of minimum expected frequency. Because of the low number of participants in several of the categories, the ethnicity and sexual orientation variables were recoded into two groups: Caucasian/Other and Heterosexual/LGB. Fisher's exact test was then used because of the violations of the chi-square assumption. There was no significant difference found between Time 1 and Time 1-2 individuals for ethnicity (p = 1.00) or sexual orientation (p = .33). Again, these results indicate that the attrition rate was not unduly influenced by these variables.

A bivariate correlation was conducted between the scores from the first test administration and the second test administration two weeks later. Test-retest reliability was also assessed with the recommended intraclass correlation coefficient. A coefficient score above .70 was considered fair reliability (Cicchetti, 1994). The Pearson's product-moment correlation coefficient and the intraclass correlation coefficient for all the scales were $r \geq .77$, indicating good consistency over a two week period (see Table 10).

Table 10. Measure of Test-Retest Reliability for SOS-T.

Scale	Pearson's Correlation	Intraclass Correlation
SOS-T-Total	.84	.91, 95% CI [.88, .93]
SOS-T-Success	.77	.87, 95% CI [.83, .90]
SOS-T-Self-Worth	.80	.89, 95% CI [.85, .92]

As theorized by Fredrickson and Roberts (1997) and supported by later research (Fredrickson et al., 1998), the SOS-T was able to show that self-objectification is a stable characteristic over time. Taken together, these reliability results suggest that the Self-Objectification Scale finalized through the series of principle component analyses is reliable both internally and across time.

Validity of the SOS

Before conducting the validity analyses, a series of nonparametric tests for independent samples were conducted to make sure there were no significant differences between the variables of ethnicity (Caucasian/Other), sexual orientation (Heterosexual/LGB), age, and gender on the primary measures of appearance orientation, appearance anxiety, body satisfaction, BMI, body monitoring, body shame, self-esteem, drive for muscularity, sexual objectification, and self-objectification. The alpha level was

adjusted to decrease the chance of Type I error across the 13 comparisons ($\alpha = .008$). Nonparametric tests were chosen for these analyses because of the very small and unequal sample sizes between the levels of these variables which were compounded with issues of heterogeneity of variance. The Mann-Whitney U test was used for independent variables with two levels: sexual orientation, ethnicity, and gender. The Kruskal-Wallis test was used for age, an independent variable with more than two levels. Because of the low number of participants in several of the categories, the age variable was recoded into four groups: 17-18, 19, 20, and 21+.

No significant differences were found for ethnicity, sexual orientation, or age on any of the primary measures ($p > .05$). Women were found to have significantly greater levels of appearance orientation ($p = .002$), appearance anxiety ($p < .001$), body shame ($p < .001$), and body monitoring ($p < .001$) compared to men (see Table 11). Because of these gender differences, later analyses with these variables were conducted split by gender. It should be noted that the SOS was created using a combined sample of men and women, assuming an equivalent factor structure across gender. Thus, the factor structure and reliability of the measure is unknown when used separately by gender. When possible, results were also presented with the combined gender sample for comparison.

Table 11. Median Scores by Gender Across Primary Dependent Variable Measures.

	Gender			Gender	
DV	Men	Women	DV	Men	Women
MBSRQ-App Ortn	5.25	5.50**	SOS-T-Total	2.33	2.44
AAQ	2.43	2.77**	SOS-T-Success	2.13	2.13

Table 11. cont.

	Gender			Gender	
DV	Men	Women	DV	Men	Women
OBC-Body Shame	3.00	3.75**	SOS-T-Self-Worth	2.43	2.57
OBC-Surveillance	4.00	4.50**	SOS-S-Total	2.47	2.40
RSES	1.90	2.00	SOS-S-Success	2.25	2.13
BASS	3.44	3.33*	SOS-S-Self-Worth	2.57	2.57
SOQ	-12.00	-9.00*	BMI	23.74	22.81

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

To demonstrate discriminant and convergent validity, a series of bivariate correlations and Steiger's *Z* tests were conducted to assess for significant differences between the primary variables. Normality was examined for these variables, with the data first combined and then split by gender, to make sure they met this assumption of bivariate correlations (Field, 2009). Appearance anxiety, self-esteem, unwanted sexual advances, muscle-oriented behavior, BMI, and self-objectification (SOQ) did not meet this assumption (< +/- 1 criteria). All of these variables except BMI were square root transformed to help normalize the distributions; BMI was inverse transformed. Analyses were then conducted with both the transformed and untransformed variable; however, Steiger's *Z* test results for the transformed data were only presented when significant changes occurred in the analyses after transformation.

According to the first hypothesis, The SOS-T should have a strong relationship ($r > .50$) with the current measure for self-objectification, the SOQ. In support of this hypothesis, the SOS-T-Total and SOS-T-Self-Worth were found to have significant large

positive correlations with the SOQ for both genders (r = .63 and r = .68 respectively). The SOS-T-Success subscale was found to have a medium relationship with the SOQ for both genders (r = .47) (see Table 12).

Supporting the results of the factor analysis, the more intrinsic dimension of the SOS (SOS-T-Self-Worth) was found to have the strongest relationship with the SOQ. This relationship is consistent with the definition of self-objectification and the structure of the SOQ. Self-objectification can be defined as individuals internalizing the message that their value comes from being an object (i.e., from their bodies) (Fredrickson & Roberts, 1997), and higher scores on the SOQ reflect physical appearance items being ranked higher than physical competence items. Similarly, the SOS-T-Self-Worth appeared to capture the value that participants' placed on their physical appearances, with some of the items reflecting participants' value of their appearances over other attributes (e.g., health, comfort, abilities).

The more extrinsic dimension of the SOS (SOS-T-Success) had the lowest correlation with the SOQ, indicating that this subscale likely measures more than just valuing one's physical appearance. It seems to further encompass *why* physical appearance may be a value (e.g., the belief that physical appearance will result in gains in life). Because this is still based in the value placed on physical appearance, the SOS-T-Success seems to reflect another aspect of self-objectification that the SOQ is not as sensitive to because of its limited focus. On the other hand, the moderate sized correlation could also indicate that the subscale is tapping into another construct.

Table 12. Correlations between Primary Variables for Genders Combined.

Scales	1	2	3	4	5	6	7	8	9	10	11	12
1. SOS-T-Total	-	.91**	.88**	.63**	.04	-.07	-.40**	.62**	.55**	.48**	.61**	.61**
2. SOS-T-Success		-	.59**	.47**	.08	-.09	-.32**	.47**	.48**	.36**	.50**	.52**
3. SOS-T-Self-Worth			-	.68**	-.01	-.02	-.40*	.65**	.50**	.50**	.59**	.58**
4. SOQ				-	-.01	.01	-.40**	.59**	.46**	.39**	.47**	.56**
5. BMI					-	-.96**	-.35**	.06	-.05	.21**	.26**	.29**
6. BMI^{T}						-	.32**	-.07	.03	-.18**	-.29**	-.29**
7. BASS							-	-.48**	-.30**	-.58**	-.59**	-.76**
8. OBC-Surveillance								-	.74**	.41**	.62**	.67**
9. MBSRQ-App Ortn									-	.26**	.45**	.52**
10. RSES										-	.56**	.66**
11. OBC-Body Shame											-	.73**
12. AAQ												-

^{T}Denotes transformed data.*$p < .05$.**$p < .01$.

Table 13. Correlations between Primary Variables for Men Only.

Scales	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. SOS-T-Total	-	.93**	.92**	.61**	.07	-.09	-.28**	.66**	.55**	.41**	.41**	.60**	.62**	.61**
2. SOS-T-Success		-	.71**	.50**	.11	-.13	-.29**	.51**	.48**	.35**	.35**	.57**	.58**	.57**
3. SOS-T-Self-Worth			-	.64**	.01	-.04	-.23*	.72**	.55**	.42**	.42**	.54**	.55**	.56**
4. SOQ				-	.08	-.05	-.38**	.57**	.42**	.38**	.37**	.40**	.57**	.57**
5. BMI					-	-.95**	-.41**	-.01	-.11	.24*	.22*	.27**	.33**	.32**
6. BMI^{T}						-	.34**	.03	.13	-.17	-.15	-.28**	-.28**	-.27**
7. BASS							-	-.28**	-.12	-.38**	-.38**	-.37**	-.60**	-.61**
8. OBC-Surveillance								-	.72**	.32**	.32**	.47**	.55**	.55**
9. MBSRQ-App Ortn									-	.17	.17	.33**	.41**	.40**
10. RSES										-	1.0**	.39**	.61**	.60**
11. RSES^{T}											-	.39**	.59**	.59**
12. OBC-Body Shame												-	.51**	.51**
13. AAQ													-	1.0**
14. AAQ^{T}														-

^{T}Denotes transformed data.*$p < .05$.**$p < .01$.

Table 14. Correlations between Primary Variables for Women Only.

Scales	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SOS-T-Total	-	.90**	.85**	.66**	.63**	.03	-.05	-.49**	.62**	.55**	.52**	.64**	.64**
2. SOS-T-Success		-	.53**	.47**	.44**	.05	-.06	-.37**	.49**	.51**	.37**	.51**	.53**
3. SOS-T-Self-Worth			-	.70**	.69**	.00	-.03	-.50**	.60**	.44**	.55**	.61**	.59**
4. SOQ				-	.98**	-.05	.00	-.40**	.57**	.46**	.40**	.47**	.52**
5. SOQ^{T}					-	-.09	.05	-.37**	.56**	.43**	.37**	.43**	.49**
6. BMI						-	-.97**	-.35**	.16	.03	.20*	.35**	.34**
7. BMI^{T}							-	.36**	-.20*	-.09	-.19*	-.38**	-.36**
8. BASS								-	-.59**	-.39**	-.72**	-.70**	-.85**
9. OBC-Surveillance									-	.72**	.48**	.66**	.71**
10. MBSRQ-App Ortn										-	.32**	.47**	.55**
11. RSES											-	.67**	.71**
12. OBC-Body Shame												-	.79**
13. AAQ													-

^{T}Denotes transformed data.*$p < .05$.**$p < .01$.

SOS-T is supposed to measure the importance that women place on their bodies while the Surveillance and Appearance Orientation subscales reflect habitual body monitoring. Thus, to be consistent with the second hypothesis, the SOS-T should be more strongly positively correlated with the SOQ compared to either the Surveillance or the Appearance Orientation subscales. Furthermore, the correlation between the Surveillance subscale and the Appearance Orientation subscale should be significantly stronger than the correlation between either of those subscales and the SOS-T.

First, bivariate correlations were conducted between the SOS-T, SOQ, Surveillance subscale of the OBC Scale, and Appearance Orientation subscale of the MBSRQ. For both men and women, the SOS-T and the SOQ were found to have significant positive relationships with the OBC-Surveillance and MBSRQ-Appearance Orientation, ranging in size from medium to large (see Tables 12 -14).

These correlations were then used in a series of Steiger's *Z* tests to determine if the correlations were significantly different; alpha was adjusted to .03 for the three comparisons for each group. Looking first at the relationship with OBC-Surveillance, for both genders the relationship between the SOS-T and SOQ was not found to be significantly different than the relationship between the SOS-T and OBC-Surveillance (see Table 15).

Table 15. Steiger's *Z* Test Results with Genders Separated Comparing SOS-T (*y*), OBC-Surveillance (1), and SOQ (2).

	Correlation (Both Genders)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.62	.63	.59	-.30	258	-.29
SOS-T-Success	.47	.47	.59	0	258	0

Table 15. cont.

	Correlation (Both Genders)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Self-Worth	.65	.68	.59	-.69	258	-.67
	Correlation (Men)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.66	.61	.57	.69	108	.68
SOS-T-Success	.51	.50	.57	.14	108	.13
SOS-T-Self-Worth	.72	.64	.57	1.33	108	1.29
	Correlation (Women)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.62	.66	.57	-.71	147	-.69
SOS-T-Success	.49	.47	.57	.32	147	.32
SOS-T-Self-Worth	.60	.70	.57	-1.85	147	-1.79

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

Looking next at the relationship with MBSRQ-Appearance Orientation, for men no significant differences were found between the relationship SOS-T has with SOQ compared to the relationship SOS-T has with MBSRQ-Appearance Orientation. Similar non-significant results were found for women, except when looking at SOS-T-Self-Worth. For women, the relationship between the SOS-T-Self-Worth and the SOQ was found to be significantly greater than the relationship between the SOS-T-Self-Worth and MBSRQ-Appearance Orientation (see Table 16).

Table 16. Steiger's *Z* Test Results with Genders Separated Comparing SOS-T (*y*), MBSRQ-Appearance Orientation (1), and SOQ (2).

	Correlation (Both Genders)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.55	.63	.46	-1.92	258	-1.85
SOS-T-Success	.48	.47	.46	.15	258	.15
SOS-T-Self-Worth	.50	.68	.46	-3.97	258	-3.78**
	Correlation (Men)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.55	.61	.42	-.77	108	-.75
SOS-T-Success	.48	.50	.42	-.24	108	-.23
SOS-T-Self-Worth	.55	.64	.42	-1.19	108	-1.14
	Correlation (Women)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.55	.62	.46	-1.10	147	-1.07
SOS-T-Success	.51	.47	.46	.66	147	.64
SOS-T-Self-Worth	.44	.70	.46	-4.25	147	-3.97**

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

Finally, to further assess the discriminant validity of the SOS-T, the relationship between OBC-Surveillance and MBSRQ-Appearance Orientation was compared to the relationship those measures have with the SOS-T. First looking at the relationship with OBC-Surveillance, for men and women the two body monitoring measures were found to have a significantly larger relationship with each other compared to the relationship that

SOS-T-Success has with OBC-Surveillance. When split by gender, no significant differences were found for the other SOS-T scales ($p > .03$). Only with the combined gender sample were the body monitoring measures found to have a significantly greater relationship with each other than the OBC-Surveillance has with all the scales of the SOS-T ($p < .03$) (see Table 17).

Table 17. Steiger's *Z* Test Results with Genders Separated Comparing OBC-Surveillance (*y*), MBSRQ-Appearance Orientation (1), and SOS-T (2).

	Correlation (Both Genders)					
2	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.74	.62	.55	3.11	258	2.96**
SOS-T-Success	.74	.47	.48	6.33	258	5.85**
SOS-T-Self-Worth	.74	.65	.50	2.33	258	2.19*
	Correlation (Men)					
2	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.72	.66	.55	1.17	108	1.12
SOS-T-Success	.72	.51	.48	3.26	108	3.05**
SOS-T-Self-Worth	.72	.72	.55	.11	108	.11
	Correlation (Women)					
2	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.72	.62	.55	2.09	147	2.01*
SOS-T-Success	.72	.49	.51	4.23	147	3.96**
SOS-T-Self-Worth	.72	.60	.44	2.28	147	2.13*

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

When examining the relationship with MBSRQ-Appearance Orientation, for both men and women the measures of body monitoring were shown to have significantly stronger correlations with each other compared to the correlations between the MBSRQ-Appearance Orientation and all the scales of the SOS-T (see Table 18).

Table 18. Steiger's *Z* Test Results with Genders Separated Comparing MBSRQ-Appearance Orientation (*y*), OBC-Surveillance (1), and SOS-T (2).

	Correlation (Both Genders)					
2	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.74	.55	.62	5.32	258	5.04**
SOS-T-Success	.74	.48	.47	6.13	258	5.67**
SOS-T-Self-Worth	.74	.50	.65	6.86	258	6.35**
	Correlation (Men)					
2	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.72	.55	.66	3.05	108	2.92**
SOS-T-Success	.72	.48	.51	3.75	108	3.50**
SOS-T-Self-Worth	.72	.55	.72	3.37	108	3.21**
	Correlation (Women)					
2	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
SOS-T-Total	.72	.55	.62	3.55	147	3.38**
SOS-T-Success	.72	.51	.49	3.74	147	3.52**
SOS-T-Self-Worth	.72	.44	.60	5.58	147	5.11**

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

Taken together, these results provide mixed evidence for the discriminant validity of the SOS-T from measures of body monitoring. There was little evidence to suggest that the SOS-T was more closely related to the SOQ, a measure of self-objectification, compared to the two measures of body monitoring. Only for the women and the combined gender sample was the SOS-T found to have a significantly greater relationship with SOQ, and this was only evident when compared against the correlations with MBSRQ-Appearance Orientation. This significant difference did not carry over to the correlation of SOS-T with the other measure of body monitoring: OBC-Surveillance. However, when the SOS-T was taken by itself (not in comparison to the strength of its relationship with the SOQ) and compared with the body monitoring measures, the results were more in support of its discriminant validity. The evidence was still mixed, but, there were more indications that the body monitoring measures had more shared variance with each other than with the SOS-T and its subscales.

These results are consistent with the close connection between self-objectification and body monitoring theorized by Fredrickson and Roberts (1997). According to the objectification theory, the direct result of self-objectification is that an individual begins to habitually monitor his/her appearance; thus, the moderate to strong relationship between these constructs is to be expected. Unfortunately, the results did not help to clarify the separation of these constructs when the SOS-T was compared to another measure of self-objectification. As discussed previously, lack of clarity between these constructs is seen in the literature. Self-objectification is often measured with body monitoring measures (Calogero, 2010) even though body monitoring has demonstrated

unique relationships with criterion variables, compared to self-objectification, when these constructs are measured separately in the same study (Moradi & Huang, 2008).

According to the third hypothesis, The SOS-T should have a weak to moderate negative relationship ($-.10 > r < -.50$) with the measure for body satisfaction and a weak relationship with BMI ($r < .30$). Support for this hypothesis and the discriminant validity of the SOS-T was found for the combined gender sample; the negative correlations with body satisfaction were $r \leq -.40$ for the SOS-T and the SOQ. When split by gender, these relationships were slightly stronger for women ($r \leq -.50$) (see Table 14). For both men and women, no significant relationships were found between BMI and the SOS-T or the SOQ.

These results are consistent with the objectification theory which posits that self-objectification is related to valuing of appearance and can occur regardless of body satisfaction (Fredrickson & Roberts, 1997). Furthermore, studies have demonstrated that self-objectification (as measured by the SOQ) has a moderate relationship with body dissatisfaction and no significant relationship with BMI in women (Noll & Fredrickson, 1998). The SOQ has also shown to have a weak to moderate relationship with body dissatisfaction and no significant relationship with BMI in men (Martins et al., 2007).

Men's drive for muscularity is theorized to be a unique aspect of men's self-objectification, and therefore, to be consistent with the fourth hypothesis, there should be a significant positive correlation between these measures ($r > .30$). For the untransformed data, significant positive correlations were found for all the SOS-T scales ($r > .19$), but not the SOQ. When DMS-Behavior was transformed, its positive correlation with SOS-T-Success was not found to be significant; the SOQ was still found

to have a non-significant relationship. However, while the correlations for the SOS-T-Total and the SOS-T-Self-Worth with DMS-Total were in the moderate strength range (r > .30); most of the correlation between the SOS-T scales and the DMS scales fell within the weak to moderate range (see Table 19).

Table 19. Correlations between Self-Objectification and Drive for Muscularity for Men Only.

Scales	1	2	3	4	5	6	7	8
1. SOS-T-Total	-	.93**	.92**	.61**	.31**	.25**	.24*	.24**
2. SOS-T-Success		-	.71**	.50**	.26**	.19*	.18	.22*
3. SOS-T-Self-Worth			-	.64**	.32**	.27**	.26**	.23*
4. SOQ				-	.12	.03	.01	.16
5. DMS-Total					-	.77**	.76**	.82**
6. DMS-Behavior						-	1.0**	.26**
7. DMS-Behavior^{T}							-	.25**
8. DMS-Body Image								-

^{T}Denotes transformed data.*p < .05.**p < .01.

Because the SOS-T addresses the flaw of the SOQ related to assessing self-objectification in men, the correlation between the SOS and the DMS should be significantly stronger than the correlation between the SOQ and the DMS. Thus, the relations between the SOS-T, SOQ, and DMS were further assessed for significant differences using Steiger's Z test. Alpha was adjusted to .03 for the three comparisons for each group. Both the SOS-T-Total and the SOS-T-Self-Worth were found to have significantly larger relationships with DMS-Total and DMS-Behavior compared to the SOQ (p < .03) (see Table 20).

Table 20. Steiger's *Z* Test Results for Men Only Comparing DMS (*y*), SOQ (1), and SOS-T (2).

	Correlation (SOS-T-Total)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
DMS-Total	.12	.31	.61	-2.37	108	-2.31*
DMS-Behavior	.03	.25	.61	-2.71	108	-2.62**
DMS-Body Image	.16	.24	.61	-1.07	108	-1.06
	Correlation (SOS-T-Success)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
DMS-Total	.12	.26	.50	-1.51	108	-1.50
DMS-Behavior	.03	.19	.50	-1.75	108	-1.72
DMS-Body Image	.16	.22	.50	-.67	108	-.67
	Correlation (SOS-T-Self-Worth)					
y	(*y*,1)	(*y*,2)	(1,2)	*t*	*df*	*Z*
DMS-Total	.12	.32	.64	-2.54	108	-2.47*
DMS-Behavior	.03	.27	.64	-3.13	108	-3.00**
DMS-Body Image	.16	.23	.64	-.97	108	-.96

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

Overall, these results demonstrate a relationship between the SOS-T and drive for muscularity which was not evident for the SOQ. The SOS-T showed better convergent validity compared to the SOQ, especially concerning its relationship to behaviors consistent with drive for muscularity. Other studies with the SOQ and DMS has shown a very inconsistent relationship between these measures, including $r = -.25$ (Daniel &

Bridges, 2010), r = .02 (Grieve & Helmick, 2008), and r = .25/.29 (Martins et al., 2007). Also, while the size of the relationship of the SOS-T with the DMS was not as strong as desired, it is consistent with, and in some aspects better, than the relationship seen in the literature between the SOQ and the DMS. It seems that self-objectification in men may relate to the importance placed on muscularity; however, this value is likely not the only aspect of self-objectification in men.

According to the fifth hypothesis, The SOS-T should have a strong relationship (r > .50) with experiences of sexual objectification. In partial support of this hypothesis, the SOS-T scales were found to have significant positive correlations with the measure for sexual objectification; however, the magnitude of the relationships fell in the small to medium range. The SOQ was not found to have a significant relationship with the ISOS (see Table 21).

Thus, there was more evidence to support the construct validity of the SOS-T compared to the SOQ. Few studies were found that analyzed the relationship between the SOQ and the ISOS. Liss, Erchull, and Ramsey (2011) found a non-significant relationship between these variables (ISOS-Body Eval, r = .06; ISOS-Sexual Adv, r = .02). Most studies examining the relationship of the ISOS with self-objectification have used measures for body surveillance. Kozee et al. (2007) found similar sized correlations between the OBC-Surveillance and ISOS (ISOS-Total, r = .30; ISOS-Body Eval, r = .27; ISOS-Sexual Adv, r = .29) as seen for the SOS-T in this study.

Table 21. Correlations between Sexual Objectification, Self-Objectification, Body Shame, and Appearance Anxiety for Women Only.

Scales	1	2	3	4	5	6	7	8	9	10	11
1. SOS-T-Total	-	.90**	.85**	.66**	.63**	.34**	.31**	.30**	.31**	.64**	.64**
2. SOS-T-Success		-	.53**	.47**	.44**	.33**	.32**	.25**	.26**	.51**	.53**
3. SOS-T-Self-Worth			-	.70**	.69**	.26**	.22**	.28**	.29**	.61**	.59**
4. SOQ				-	.98**	.17	.16	.15	.17	.47**	.52**
5. SOQ^{T}					-	.18	.16	.16	.18	.43**	.49**
6. ISOS-Total						-	.97**	.81**	.81**	.16	.11
7. ISOS-Body Eval							-	.64**	.65**	.15	.09
8. ISOS-Sexual Adv								-	1.0**	.15	.15
9. ISOS-Sexual Adv^{T}									-	.17*	.16
10. OBC-Body Shame										-	.79**
11. AAQ											-

^{T}Denotes transformed data.*$p < .05$.**$p < .01$.

These similar findings support the convergent validity of the SOS-T, given that it shares a similar relationship with sexual objectification as body monitoring, which is theorized to be the direct result of self-objectification. It is concerning that the SOQ did not show a similar relationship because that connection is one of the primary tenets of the objectification theory.

The other part of the fifth hypothesis expected moderate relationships ($r > .30$) to exist between self-objectification, body shame, and appearance anxiety. Thus, the correlations between the self-objectification measures and the measures for appearance anxiety and body shame were examined. As predicted, for both men and women, there were significant positive correlations between the SOS-T scales and appearance anxiety and body shame. These relationships were all found to be strong relationships ($r > .50$). The SOQ also showed positive correlations with these measures, moderate to strong in size (see Tables 12-14). These results demonstrate strong convergent validity of the SOS-T with two theorized psychological consequences of self-objectification: body shame and appearance anxiety (Fredrickson & Roberts, 1997). This relationship between self-objectification, body shame, and appearance anxiety has found consistent support in the literature for both men and women (Moradi & Huang, 2008).

Sexual objectification was expected to lead to body shame and appearance anxiety through the mediator of self-objectification. To show evidence of this mediating relationship, a series of criteria needed to be met (Baron & Kenny, 1986). First, sexual objectification needed to be significantly positively correlated with body shame and appearance anxiety. Thus assumption was not met; sexual objectification was not found to have a significant relationship with appearance anxiety or body shame in women (see

Table 21). Because there was no evidence of this relationship, no further testing for mediation effects by self-objectification could be conducted.

This relationship between sexual objectification, body shame, and anxiety has been found in other studies; however, typically sexual objectification has been measured through other means, such as exposure to objectifying media or experimental exposure to a mild form of sexual objectification (Moradi & Huang, 2008). Related to the ISOS, Kozee et al. (2007) found weak significant correlations between the ISOS and OBC-Shame (ISOS-Total, r = .25; ISOS-Body Eval, r = .22; ISOS-Sexual Adv, r = .26). Watson, Ancis, White, and Nazari (2013) did not find a significant relationship between the ISOS and AAQ (r = .05). Thus, it is possible that because the ISOS requires retrospective self-reporting, it is less sensitive to the relationship between these variables compared to experimental exposure to sexual objectification. Issues could be related to the bias of self-report measures, including participants being poor historians or distortions in reporting due to the sensitive nature of the questions (Kazdin, 2003).

Self-objectification is theorized to be a stable characteristic that can be heightened when individuals are exposed to a sexually objectifying situation. Because there was no manipulation in this study to expose participants to sexual objectification, there should be no significant difference between scores on the State and Trait Forms of the SOS. To test this sixth hypothesis and this aspect of construct validity, a paired samples t-test was conducted between participants' scores on the two forms. The alpha level was adjusted to .03 for the three comparisons for each group. As expected, there was no significant difference found between SOS-T and SOS-S scores. Moreover, the two measures demonstrated very strong positive correlations (see Table 22).

Table 22. Paired-Samples T-Test Results Comparing SOS-S and SOS-T with Genders Combined.

	Trait		State						
Scale	*M*	*SD*	*M*	*SD*	*N*	95% CI	*r*	*t*	*df*
SOS-Total	2.42	.64	2.43	.67	254	-.04, .03	.89**	-.32	253
SOS-Success	2.29	.72	2.30	.73	255	-.06, .04	.84**	-.29	254
SOS-Self-Worth	2.57	.72	2.58	.74	256	-.06, .04	.86**	-.38	255

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

Finally, it was hypothesized that the SOS-T would have a significant negative correlational with self-esteem, a variable not focused on attitudes and behaviors related to appearance. For both men and women, the SOS-T-Total and SOS-T-Self-Worth showed significant strong relationships with self-esteem. The SOS-Success and the SOQ demonstrated significant moderate correlations with self-esteem (see Tables 12-14). These results offer further support for the convergent validity of the SOS-T. They are consistent with the negative relationship between self-objectification and self-esteem in both men and women found in the literature (Moradi & Huang, 2008). Also, because this construct (and the RSES items) are not directly related to appearance, it helps to provide evidence that the relationships seen with the SOS-T in this study are more than just overlap between a latent construct tapped into by all of the appearance-related measures (Podsakoff, MacKenzie, & Podsakoff, 2012).

CHAPTER IV

STUDY 2

Study 1 was conducted to finalize the selection of SOS items, identify the factor structure of the measure, and run tests to examine the reliability and validity of the scales. Study 1 focused more on examining the validity of the SOS-T as the trait measure of self-objectification because there was no experimental heightening of state self-objectification in the study. Also, the concurrent validity of the SOS-T was examined, but not the criterion validity. Thus, the purpose of this study was to further assess the validity and reliability of the SOS. Study 2 expanded on Study 1 by testing the criterion validity of the SOS-T, looking at its relationship to eating disorder and muscle dysmorphia symptoms, and by assessing both the reliability and the validity of the SOS-S when used after participants were exposed to an experimental manipulation expected to result in increases in state self-objectification. It was hypothesized that:

1. The objectification theory and current literature state that self-objectification results in increased mental health risks, including increased risk for eating disorders in women. Thus, women who score high on the Trait Form of the SOS should endorse more eating disorder symptoms.

2. Similar to women's increased risk for eating disorders, recent studies suggest that self-objectification in men can place them at heightened risk for developing muscle dysmorphia. Therefore, men who score high on the Trait Form of the SOS should endorse more muscle dysmorphia symptoms.

3. To be consistent with the objectification theory and current research, individuals exposed to a sexually objectifying situation should have significantly higher levels of state self-objectification (as measured by the SOS-S).

4. As a manipulation check to determine if the exposure to a sexually objectifying situation resulted in changes in self-objectification levels, participants should also have significantly heightened levels of body surveillance, body shame, appearance anxiety, drive for muscularity attitudes, and state self-objectification as measured by the modified TST.

5. As with the Trait Form of the SOS, after state self-objectification has been experimentally heightened, the State Form should be positively correlated with body shame, body surveillance, and appearance anxiety ($r > .30$); there should be a negative correlation with self-esteem ($r > -.30$). The SOS-S should have a weak relationship with BMI ($r < .30$). For men, it should be positively correlated with drive for muscularity attitudes ($r > .30$).

Method

Participants

Seventy-nine college men and seventy-nine college women were recruited for this study. Again, young adults were chosen because self-objectification is highest in this age group (Tiggemann & Lynch, 2001). This sample size was chosen to maximize the ability to detect an effect size of $f = .225$ with power of .80. An a priori power analysis was conducted using the computer software GPower 3.1.2. The analysis was run based on using an ANOVA with 4 groups, and 1 numerator *df*. Power was set at .80, and alpha

was set at .05. Based on this input, a sample size of 158 participants was needed to detect an effect size of $f = .225$.

Two participants' data were deleted due to issues with testing. One man was shown the wrong experimental stimulus, and one woman's data were not recorded due to an internet failure. Thus, the final sample size for gender was 78 men and 78 women. Ages ranged from 18 to 56 years (M =20.68, SD = 4.10). Participants identified themselves as Caucasian (n = 138), American Indian (n = 5) Black/African American (n = 2), Hispanic/Latino(a) (n = 3), Asian (n = 6), and other (n = 2). The average BMI was 24.53 (SD = 4.10). Participants identified themselves as heterosexual (n = 150), gay (n = 1), bisexual (n = 2), and other (n = 2). Non-psychology student participants were given $10 for their participation (n = 29) while psychology student participants were given course credit (n = 127).

Measures

Participants were again given the Surveillance subscale of the OBC Scale, Body Shame subscale of the OBC Scale, Appearance Anxiety Questionnaire, SOS-T, SOS-S, SOQ, Rosenberg Self-Esteem Scale, and Drive for Muscularity Scale. Most of these measures were found to have good internal consistency. While the SOS-T-Self-Worth demonstrated adequate internal reliability, the SOS-S-Self-Worth showed poor internal consistency (see Table 23).

Table 23. Scale Internal Consistency (Cronbach's Alpha).

Scale	α	Scale	α
OBC-Surveillance	.86	DMS-Total	.91
OBC-Body Shame	.83	DMS-Body Image	.89

Table 23. cont.

Scale	α	Scale	α
AAQ	.87	DMS-Behavior	.86
SOS-T-Total	.87	SOS-S-Total	.81
SOS-T-Success	.86	SOS-S-Success	.78
SOS-T-Self-Worth	.76	SOS-S-Self-Worth	.62
RSES	.89		

As with Study 1, demographic information was collected, including height and weight to determine BMI classification, because body perception constructs (e.g., self-objectification and body shame) have been shown to vary across certain demographic variables (Moradi & Huang, 2008).

Modified Twenty Statements Test

In addition to the SOS-S, level of state self-objectification was measured using the modified TST (Kuhn & McPartland, 1954) developed by Fredrickson et al. (1998). Similar to Harper and Tiggemann (2008), the participants were asked to complete ten open-ended "I am _____" statements to describe themselves. When scoring, the statements are divided into six categories: (1) *states or emotions* (e.g., "I am bored"), (2) *traits or abilities not body related* (e.g., "I am funny"), (3) *physical competence* (e.g., "I am strong"), (4) *body shape and size* (e.g., "I am skinny"), (5) *other physical appearances* (e.g., "I am attractive"), and (6) *uncodeable or illegible*. The total number of statements coded as *body shape and size* or *other physical appearances* was used as the measure of state self-objectification. Two independent coders were used to score the statements. Inter-rater reliability (kappa) was assessed for the two coders of the state

self-objectification measure. The analysis indicated that there was good inter-rater reliability ($\kappa = .88$). The two coders' scores were then averaged to create an overall measure of state self-objectification.

Muscle Dysmorphia Inventory

The Muscle Dysmorphia Inventory (MDI) developed by Short (2005) was used to assess endorsement of muscle dysmorphia symptoms by male participants. This inventory is composed of 25 items with responses ranging from 1 (*strongly disagree*) to 6 (*strongly agree*) for statements such as "I am more muscular than others." An overall score is obtained by taking the average of the items. The MDI has shown good internal consistency ($\alpha = .87$) (Short, 2005). Grieve and Helmick (2008) found support for the theoretical connection between self-objectification and muscle dysmorphia in men using this measure. The MDI displayed good internal reliability in the current study ($\alpha = .81$).

Eating Disorder Examination Questionnaire

The Eating Disorder Examination Questionnaire 6.0 (EDE-Q) developed by Fairburn and Beglin (2008) was used to assess endorsement of eating disorder symptoms by female participants. This is a 28 item self-report measure based on the EDE interview, and it has a combination of open answer and Likert-type items (on a 0 to 6 scale with high scores indicating greater symptom severity). The items ask about the frequency of eating disorder related behaviors or attitudes over the past 28 days, for example "Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?" A global score can be calculated as well as the scores for four subscales: Restraint, Eating Concern, Weight Concern, and Shape Concern. However, the factor structure of the EDE-Q has

not been found to correspond with the four subscales. The EDE-Q has shown adequate convergent validity with the EDE and other related measures. Furthermore, the measure has demonstrated good internal and test-retest reliability (Berg, Peterson, Frazier, & Crow, 2012). Only the overall scale was used for this study. The scale demonstrated very good internal consistency ($\alpha = .93$).

Consumer Response Questionnaire

A slightly altered version of the Consumer Response Questionnaire originally devised by Mills, Polivy, Herman, and Tiggemann (2002) and modified by Harper and Tiggemann (2008) was used to bolster the cover story. The measure consists of four items on a 7 point scale, ranging from 1 (*definitely disagree*) to 7 (*definitely agree*) for items such as "If I saw this advertisement in a magazine, it would catch my eye." This measure was used to bolster the cover story that the study was concerned with consumer decision making and to help ensure that participants focused on the magazine images.

Experimental manipulation: Image type.

As done by Harper and Tiggemann (2008), self-objectification was experimentally induced by having participants view a series of sexually objectifying magazine images. Each image was a full page advertisement which was color copied and presented in a book of 8.5 x 11 inch cards. Similar to the procedure of Harper and Tiggemann (2008), 11 advertisement images were selected for women from 10 women's fashion and beauty magazines: *Elle, Glamour, InStyle, Vogue, W, Harper's Bazaar, Cosmopolitan, Allure, Vanity Fair,* and *Marie Claire*. For men, 11 advertisement images were selected from 10 men's fashion and fitness magazines: *Men's Journal, GQ, Men's Fitness, Esquire, Bleu, Details, Nylon for Guys, FitnessRx for Men, Men's Health,* and

Maxim. For a control, 15 advertisement images were selected from these magazines that only depicted a product (i.e., no models present in the image).

Eighty advertisement images were selected for each of the two experimental groups and the one control group. Advertisements were initially chosen if they featured the body and/or face of a thin, toned, and attractive woman or man. These images were then pilot tested with a small group of men and women ($N = 7$). Data was collected on each image using a series of 7 point Likert-type items with a higher score indicating greater endorsement. Each image was rated based on the appeal of the advertisement and the effectiveness of the advertisement. The images for the experimental groups were further rated on the physical attractiveness of the individual depicted in the advertisement and how much the individual embodied the ideal attractiveness of that gender (i.e., for women the thin-ideal and for men the toned/muscular-ideal). Means from these data were used to match the images on these variables across the three groups.

Images were chosen that were at least moderately effective and visually appealing. Also, images were selected which had a depicted individual deemed to be both physically attractive and embodying his/her gender ideal (see Table 24). One way ANOVA results showed no significant differences on these ratings between the three image conditions ($p > .05$).

Table 24. Ratings of Men, Women, and Product-Only Advertisement Images.

	Mean			Standard Deviation		
Rating	Men	Women	Product	Men	Women	Product
Effectiveness	4.31	4.38	4.93	1.24	1.37	1.51
Visual Appeal	4.91	5.11	4.29	.72	.79	.79

Table 24. cont.

	Mean			Standard Deviation		
Rating	Men	Women	Product	Men	Women	Product
Gender Ideal	5.70	6.01	-	.58	.71	-
Physical Attractiveness	5.79	5.82	-	.60	.55	-

Procedure

Both male and female psychology students were offered course credit for their participation. Because of difficulties recruiting male psychology students, male UND students from other majors were offered $10 for their participation. Male participants were tested individually with a male research assistant, and female participants were tested in the same format by a female research assistant. Research assistants were blind to the experimental hypotheses. Participants were told that they were participating in a consumer decision making study examining the effectiveness of advertising targeted towards their gender (Harper & Tiggemann, 2008). Upon arrival the participants were asked to give informed consent and fill out demographic information along with the trait self-objectification measures (the SOQ and SOS-T). Items for height and weight were included with the other demographic information. All items were presented and completed by participants on a computer.

Participants were randomly assigned to be in either the objectifying or the control condition. As done by Harper and Tiggemann (2008) to induce a state of self-objectification, the participants were asked to view 15 magazine images and fill out the Consumer Response Questionnaire after viewing each magazine. In the objectifying condition, participants viewed 11 sexually objectifying images and 4 product-only

images. In the control condition, participants viewed 15 product-only images. The participants were then given measures for state self-objectification (the modified TST and the SOS-S). The order of these two measures was randomly assigned by the computer. Participants were given measures for body surveillance, body shame, appearance anxiety, drive for muscularity, eating disorder symptoms (females only), self-esteem, and muscle dysmorphia symptoms (males only) in random order. Finally, participants were gently queried for suspicions and then debriefed.

Results and Discussion

Pre-Analysis Data Screening

Again, frequency distributions were conducted to identify potential errors in the data. Second, the primary variables and demographic variables were converted to *z* scores to identify outliers, defined as values exceeding +4 or -4 (Mertler & Vannatta, 2010). Outliers were found for RSES. Because there was no indication that these outlying data were errors, invalid, or not from the population intended to sample, the data were kept and later analyses with this variable were run with both the square root transformed and untransformed variable. No significant changes were found between the analyses with the transformed and untransformed variable; thus, results were only reported for the untransformed data.

Reliability of the SOS

An analysis of internal consistency was conducted to determine if there was adequate consistency and inter-correlation among the items of the State Form of the SOS when it was used during a situation of experimentally heightened self-objectification. For these analyses, only the SOS data from individuals in the experimental condition was

used. For the scale to be considered internally consistent there should be a Cronbach's alpha of .80 (Clark & Watson, 1995). The SOS-S-Total ($\alpha = .82$) and the SOS-S-Success ($\alpha = .79$) displayed good internal consistency in the experimental condition. The SOS-S-Self-Worth was shown to have poor internal consistency ($\alpha = .63$), similar to when combined across conditions (see Table 23).

Next the SOS-S in the experimental condition was analyzed to see how closely it fit with the other recommendation of internal consistency and unidimensionality where individual inter-item correlations should be "moderate in magnitude and should cluster narrowly around the mean" (p. 316) with values ranging between .15 and .50 (Clark & Watson, 1995). The SOS-S-Success adhered fairly close to this recommendation (see Table 25) which is evidence of the scale's unidimensionality. Conversely, the SOS-S-Total and SOS-S-Self-Worth showed small means and a wide range in their inter-item correlations, offering little support for these scales' unidimensionality.

Table 25. Measure of Unidimensionality for SOS-S in the Experimental Condition Using Inter-Item Correlations.

Scale	*M*	*SD*	Range
SOS-S-Total	.25	.25	$-.24 \geq r \leq .70$
SOS-S-Success	.35	.18	$-.04 \geq r \leq .68$
SOS-S-Self-Worth	.20	.28	$-.24 \geq r \leq .62$

These results are counter to the reliability results from Study 1. In Study 1, the SOS-S showed good internal consistency ($\alpha > .85$) and expected unidimensionality (see Tables 7-8). The SOS-S-Self-Worth subscale in particular demonstrated questionable reliability in Study 2. Further analyses using the SOS-S, especially the SOS-S-Self-Worth, should

be interpreted with caution because this unreliability may be due to random variation, resulting in greater error and lower power (Kazdin, 2003).

Validity of the SOS

Before conducting the validity analyses, a series of nonparametric tests for independent samples were performed to make sure there were no significant differences between the variables of ethnicity (Caucasian/Other), sexual orientation (Heterosexual/LGB), age, participant incentive (Paid/Credit), and gender on the primary measures of appearance anxiety, body monitoring, body shame, BMI, self-esteem, drive for muscularity, self-objectification, eating disorder symptoms, and muscle dysmorphia symptoms. Because of the low number of participants in several of the categories, the age variable was recoded into five groups: 18, 19, 20, 21, and 22+. Again, nonparametric tests were chosen because of the very small and unequal sample sizes between the levels of several of the variables. Even though gender had equal sample size, it failed to meet the assumption of homogeneity of variance for parametric tests across a significant number of the primary variables.

The Mann-Whitney U test was used for independent variables with two levels: sexual orientation, ethnicity, gender, and participant incentive. The Kruskal-Wallis test was used for age because there were more than two levels. The alpha level was set at .006 to decrease the chance of Type I error across the 18 comparisons for each group. No significant differences were found for sexual orientation, age, or ethnicity on any of the primary measures ($p > .006$). Women were found to have significantly greater levels of appearance anxiety ($p < .001$) and state self-objectification as measured by the SOS-S ($p \leq .001$). Men were found to have significantly higher BMIs ($p < .001$) (see Table 26).

Table 26. Median Scores by Gender Across Primary Dependent Variable Measures.

	Incentive		Gender		Ethnicity		Sexual Ortn		Age				
DV	Credit	Paid	Men	Women	Caucasian	Other	Hetero.	LGB	18	19	20	21	22+
AAQ	2.43	2.10**	2.18	2.53**	2.37	2.10	2.37	2.07	2.60	2.33	2.42	2.73	2.27
OBC-Body Shame	2.88	2.25	2.56	3.00*	2.75	2.06	2.75	1.50*	3.25	2.63	3.00	2.63	2.31
OBC-Surveillance	4.13	3.63	3.88	4.44*	4.13	4.06	4.13	2.88*	4.63	4.13	4.63	3.88	3.56
RSES	1.80	1.70	1.70	1.85*	1.80	1.60	1.70	1.60	1.70	1.80	1.70	1.80	1.70
SOQ	-17.0	-19.0	-18.0	-15.0	-17.0	-19.0	-17.0	-25.0	-11.0	-15.0	-19.0	-19.0	-19.0
SOS-T-Total	2.20	2.40	2.20	2.23	2.20	2.63*	2.20	1.87	2.33	2.13	2.27	2.13	2.33
SOS-T-Success	2.00	2.25	2.13	2.06	2.13	2.56	2.13	1.75	2.25	2.00	2.13	1.94	2.25
SOS-T-Self-Worth	2.29	2.43	2.14	2.29	2.14	2.57	2.29	1.86*	2.43	2.14	2.29	2.14	2.14
SOS-S-Total	2.47	2.30	2.10	2.60**	2.40	2.33	2.40	2.40	2.53	2.47	2.57	2.20	2.23
SOS-S-Success	2.25	2.19	2.00	2.31**	2.25	2.13	2.25	2.00	2.25	2.13	2.25	2.00	2.25
SOS-S-Self-Worth	2.71	2.29**	2.14	2.85**	2.71	2.57	2.57	2.71	2.71	2.71	2.86	2.29	2.29*
TST	1.50	1.50	1.50	1.50	1.50	1.50	1.50	.00	1.50	.75	1.50	.00	1.50
DMS-Total	2.07	2.50	-	-	2.07	2.68*	2.21	2.29	2.07	2.00	2.18	2.61	2.29

Table 26. cont.

	Incentive		Gender		Ethnicity		Sexual Ortn		Age				
DV	Credit	Paid	Men	Women	Caucasian	Other	Hetero.	LGB	18	19	20	21	22+
DMS-Body Image	2.57	2.71	-	-	2.57	3.36	2.57	3.00	2.86	2.43	2.57	3.21	2.50
DMS-Behavior	1.57	2.00	-	-	1.57	2.29	1.57	1.57	1.57	1.43	1.57	2.71	2.14
MDI	2.64	2.36	-	-	2.56	2.24	2.56	2.48	2.12	2.56	2.72	2.56	2.64
EDE-Q-Total	-	-	-	-	1.30	1.83	1.43	.35	1.83	.87	1.74	1.02	.87
BMI	23.53	25.10**	25.22	22.39**	23.90	23.62	23.78	19.79	23.70	22.60	22.81	25.76	25.10**

[T]Denotes transformed data.*$p < .05$.**$p < .01$.

Because of these gender differences, later analyses with these variables were conducted split by gender.

Paid participants were shown to have significantly lower levels of SOS-S-Self-Worth (p = .004) compared to participants who were given course credit. No significant differences were found for any other of the primary measures (p > .006). These results for participant incentive may have been confounded by gender because all of the paid participants were men, and the pattern of significant and near significant results for this variable mirrored those found for gender. The Mann-Whitney U test was re-run split by gender, and as expected, when the participant incentive differences were examined for men, no significant differences were found on the primary variables (p > .006).

The first two hypotheses stated that high self-objectifying women and men should have greater mental health risks, including greater eating disorder symptom endorsement for women and greater muscle dysmorphia symptom endorsement for men. These two hypotheses were tested using a series of standard multiple regressions with trait self-objectification as the independent variable and symptom endorsement as the dependent variable. First the data were tested, split by gender, to make sure they met the assumption of normality (Mertler & Vannatta, 2010). The SOQ and SOS-T-Self-Worth did not meet this assumption (< +/- 1 criteria) and were square root transformed to help normalize the distributions. Analyses were then conducted with both the transformed and untransformed variables; however, only the untransformed data was reported because no significant changes occurred in the analyses after transformation.

First, SOS-T-Total and SOQ were examined as predictors of the criterion EDE-Q-Total. A standard multiple regression was use to assess whether the SOS-T was a

significant predictor of eating disorder symptoms (entered in Block 1) and whether the SOQ measure was able to account for any further variance (entered in Block 2). The data were assessed to ensure that several further regression assumptions were met: no multicollinearity (tolerance > .1), $r \leq .70$ for IV/IV correlations, homoscedasticity, linearity, no influential data points (Cook's Distance < 1.0), and independence of residuals (Pallant, 2005). Regression results indicated that Model 2 significantly predicted eating disorder symptoms, $R^2 = .27$, $R^2_{adj} = .25$, $F(2, 74) = 13.85$, $p < .001$. This model accounted for 27% of the variance in eating disorder symptoms in women. A summary of regression coefficients is presented in Table 27. A review of the beta weights indicated that both the SOS-T-Total and the SOQ were found to significantly contribute to the model.

Table 27. Summary of Multiple Regression Analysis for Eating Disorder Symptoms in Women ($N = 77$).

Variable	*B*	*SE B*	β
Model 1			
SOS-T-Total	.78	.19	.44**
Model 2			
SOS-T-Total	.50	.20	.28*
SOQ	.03	.01	.33**

Note. Model 1 $R^2 = .19$ ($p < .001$), Model 2 $R^2 = .27$ ($p < .001$). *$p < .05$.**$p < .01$.

Next, the two SOS-T subscales (entered Block 1) and the SOQ (entered Block 2) were analyzed as predictors of the criterion EDE-Q-Total. The data met the regression assumptions. Regression results indicated that Model 1 significantly predicted eating disorder symptoms, $R^2 = .27$, $R^2_{adj} = .25$, $F(2, 74) = 13.77$, $p < .001$. The *F* change from

Model 1 to Model 2 was not significant (p = .06), indicating that the SOQ was not a significant contributor. Model 1 accounted for 27% of the variance in eating disorder symptoms in women. Only SOS-T-Self-Worth was found to significantly contribute to the model. A summary of regression coefficients is presented in Table 28.

Table 28. Summary of Multiple Regression Analysis for Eating Disorder Symptoms in Women (N = 77).

Variable	*B*	*SE B*	β
Model 1			
SOS-T-Success	-.01	.17	-.01
SOS-T-Self-Worth	.87	.19	.52**
Model 2			
SOS-T-Success	.00	.17	.00
SOS-T-Self-Worth	.64	.23	.38**
SOQ	.02	.01	.23

Note. Model 1 R^2 = .27 (p < .001), Model 2 R^2 = .31 (p < .001). *p < .05.**p < .01.

These results support the hypothesis and provide evidence for the criterion validity of the SOS-T. While the SOS-T-Total was predictive of eating disorder symptoms, the SOQ was still able to account for a significant amount of the variance. However, when the SOS-T was broken down into its subscales, the SOS-T-Self-Worth was the only significant predictor. Thus, this subscale of the SOS-T appears to be superior in that it allows for a more parsimonious prediction of eating disorder symptoms. These results provide further empirical evidence for the connection between self-objectification and eating disorder symptoms (Calogero et al., 2005; Muehlenkamp &

Saris-Baglama, 2002; Noll & Fredrickson, 1998) and show that the SOS-T is operating consistent with the tenets of the objectification theory.

Looking next at muscle dysmorphia symptoms in men, the SOS-T-Total (entered in Block 1) and the SOQ (entered in Block 2) were examined as predictors of the criterion MDI. The data met the assumptions for the regression analysis. Regression results indicated that Model 1 significantly predicted muscle dysmorphia symptoms, R^2 = .12, R^2_{adj} = .11, $F(1, 76) = 10.51$, $p = .002$. The F change from Model 1 to Model 2 was not significant ($p = .53$), indicating that the SOQ was not a significant contributor. Model 1 accounted for 12% of the variance in muscle dysmorphia symptoms in men. A summary of regression coefficients is presented in Table 29.

Table 29. Summary of Multiple Regression Analysis for Muscle Dysmorphia Symptoms in Men ($N = 78$).

Variable	*B*	*SE B*	β
Model 1			
SOS-T-Total	.33	.10	.35**
Model 2			
SOS-T-Total	.30	.12	.31*
SOQ	.00	.01	.08

Note. Model 1 $R^2 = .12$ ($p = .002$), Model 2 $R^2 = .13$ ($p = .01$). *$p < .05$.**$p < .01$.

Finally, the SOS-T-Success, SOS-T-Self-Worth (entered Block 1), and SOQ (entered Block 2) were analyzed as predictors of the criterion MDI. The data met the regression assumptions. Regression results indicated that Model 1 significantly predicted muscle dysmorphia symptoms, $R^2 = .14$, $R^2_{adj} = .12$, $F(2, 75) = 6.10$, $p = .004$. The F change from Model 1 to Model 2 was not significant ($p = .86$), indicating that the SOQ

was not a significant contributor. Model 1 accounted for 14% of the variance in muscle dysmorphia symptoms in men. A summary of regression coefficients is presented in Table 30. Only SOS-T-Self-Worth was found to significantly contribute to the model.

Table 30. Summary of Multiple Regression Analysis for Muscle Dysmorphia Symptoms in Men (N = 78).

Variable	*B*	*SE B*	β
Model 1			
SOS-T-Success	.09	.10	.12
SOS-T-Self-Worth	.27	.11	.30*
Model 2			
SOS-T-Success	.09	.10	.12
SOS-T-Self-Worth	.25	.13	.29
SOQ	.00	.01	.03

Note. Model 1 R^2 = .14 (p = .004), Model 2 R^2 = .14 (p = .01). *p < .05.**p < .01.

These results support the predicted relationship between self-objectification and muscle dysmorphia which is further evidence for the criterion validity of the SOS-T. Again, the internal self-worth dimension of the SOS-T appeared to be the primary contributor to explaining variance in muscle dysmorphia symptoms in men. Unlike with eating disorder symptoms, with muscle dysmorphia symptoms the SOQ was not found to be a significant predictor in either regression analysis. These results are inconsistent with the study conducted by Grieve and Helmick (2008) who found a significant relationship between the SOQ and the MDI (r = .32). This discrepancy suggests an unreliable relationship between these measures. The lack of relationship between the SOQ and muscularity concerns was seen in Study 1 with the non-significant relationship between

the SOQ and DMS. Taken together, these results suggest that the SOS-T has better construct validity in men compared to the SOQ; the SOQ does not seem to be encompassing the unique relationship that men's self-objectification is theorized to have with drive for muscularity and muscle dysmorphia (Grieve & Helmick, 2008).

The next two hypotheses stated that exposing participants to a sexually objectifying situation will lead to an increase in state self-objectification and related negative consequences. These hypotheses were tested using a series of 2(Condition: Objectifying vs. Neutral) x 2(Gender: Male vs. Female) ANOVAs. For these analyses state self-objectification (as measured by the State Form of the SOS and the modified TST), body surveillance, appearance anxiety, and body shame were used as the dependent variables. Impact on drive for muscularity attitudes in men was assessed by a one way (Condition: Objectifying vs. Neutral) ANOVA.

Before conducting these analyses, it was necessary to ensure that the assumptions of the analysis of variance were met: independence of observations, normality of the dependent variable, and homogeneity of variance. Independence of observations was not analyzed through statistical means because it is mainly a design issue. Random assignment into conditions was used as a way to safeguard against violations of the assumption of independence of observations (Mertler & Vannatta, 2010). All variables were found to meet the assumption of normality (< +/- 1 criteria). Homogeneity of variance was assessed using Levene's test. A Bonferroni alpha level adjustment was used for these analyses with alpha set at .02 for the six ANOVAs. No significant main effects for condition or interactions between condition and gender were found for any of the dependent variables ($p > .02$).

To support the construct validity of the SOS-S, a significant main effect or interaction should have been found for condition. There was no evidence to suggest that the SOS-S was sensitive to any experimentally heightened levels of state self-objectification. That being said, the manipulation check (the ANOVAs with state self-objectification measured with the modified TST, body surveillance, appearance anxiety, drive for muscularity attitudes, and body shame) also failed to demonstrate any differences between individuals in the experimental condition versus the control condition. Thus, it seems that the experimental manipulation itself failed to result in the desired effect.

It is unclear why the advertisements selected did not induce a state of self-objectification because Harper and Tiggemann (2008) were able to experimentally manipulate self-objectification levels using similar procedures. One possibility is that Harper and Tiggemann started with a pool of 20 women's Australian fashion magazines. A smaller starting pool of magazines found in the United States was used for this study (although an equal initial sample of 80 images was selected). It is possible that Harper and Tiggemann were able to select more influential images, especially because they were not attempting to match images across male and female advertisements. As discussed previously, women in advertisements are sexually objectified more than men (Monk-Turner et al., 2008; Reichert & Carpenter, 2004). However, when comparing the mean effectiveness (M = 4.76, SD = 1.62), visual appeal (M = 4.82, SD = 1.60), and attractiveness (M = 5.79, SD = 1.06) of Harper and Tiggemann's advertisement images, there seemed to be little difference from the mean ratings for the images used in this study (see Table 24).

Magazine advertisements have been used to test the objectification theory in women in other studies as well. For example, Monro and Huon (2005) selected 12 images featuring idealized bodies from magazines such as *Cleo, Cosmopolitan, Men's Health*, and *Who Weekly*. They found that exposure to these images resulted in increases in body shame and appearance anxiety, especially in high self-objectifying women. In a different study, Monro and Huon (2006) used six images featuring idealized bodies from magazines such as *Cleo, Cosmopolitan, Marie Claire*, and *Who Weekly*. Opposite of their hypothesis, they found that high self-objectifying women exposed to these advertisements consumed more food. Contrary to these findings, there was no significant change in body shame or appearance anxiety as a result of exposure to objectifying magazine images in the current study.

Other researchers have also been able to use magazine advertisements to induce body image concerns in men. Leit, Gray, and Pope (2001) exposed men to 20 advertisements featuring muscular men and saw changes in body perceptions related to muscularity. Counter to these findings, the current study did not show any significant differences for body image related to drive for muscularity in male participants. Unfortunately, these researchers (Leit et al., 2001; Monro & Huon, 2005; Monro & Huon, 2006) reported less detail in their selection of advertisements (e.g., number of images in original pool, means of ratings used for selection, titles of all magazines used); thus, it is difficult to determine what was potentially ineffective about the current study's experimental apparatus, except the number of images shown.

Want (2009) conducted a meta-analysis on the effect of experimental exposure to media images on women's appearance satisfaction. Overall, as with the previous studies

discussed, Want found experimental media exposure to have a small to medium effect on social comparison. The use of magazine images was the most common stimuli, compared to other media such as TV programs. Want examined the impact of several different variables that may alter the effectiveness of the stimuli. Related to this study, the amount (e.g., number of magazines) or length of exposure to the media was not found to moderate the effect size. There was some evidence to suggest that pre-exposure questions about appearance increase the effect of the media exposure. Giving participants "dummy" instructions to focus on other aspects of the advertisement was found to relate to larger effect sizes. Unfortunately, no similar meta-analytic study was found examining the effectiveness of experimental media exposure in men.

The current study had several of the factors that were shown by Want (2009) to relate to larger effect size, such as pre-exposure questions about trait self-objectification and having instructions that distract participants from the real purpose of the study. Furthermore, there is no indication that the number of magazines was a significant factor, especially because the number of images found to be effective varies quite greatly across studies (e.g., from 6 to 20). Thus, the ineffectiveness of experimental manipulation in the current study may be related to random and unknown variations in the magazine advertisement sample or in the participant sample.

According to the fifth hypothesis, when participants are placed in a sexually objectifying situation, the SOS-S should be related to body surveillance, body shame, appearance anxiety, self-esteem, and drive for muscularity attitudes (in men). There should be no relationship between the SOS-S and BMI. Because there was no evidence of inducing a state of self-objectification in participants, these analyses could not be

conducted. The State Form and the Trait Form have identical items; thus, there would be no way to confirm that the SOS-S was measuring self-objectification in the moment and not just the trait aspect of the construct.

CHAPTER V

GENERAL DISCUSSION

The purpose of this series of studies was to develop a new measure for assessing self-objectification that addressed some of the methodological and psychometric issues of the current measures, including the Self-Objectification Questionnaire, the modified Twenty Statements Test, the Surveillance subscale of the OBC Scale, and the Appearance Orientation subscale of the MBSRQ. Concerns have been raised about the construct validity, reliability, and participant error related to the use of the measures originally developed to assess self-objectification: the SOQ and the modified TST. Further problems arise from the Surveillance subscale and the Appearance Orientation subscale which were not originally validated to measure the construct of self-objectification and which are used inconsistently by different researchers to measure self-objectification and appearance focus/monitoring. Finally, there are concerns about the validity of the Surveillance subscale and SOQ for use with men (Calogero, 2010).

In an attempt to address these issues, the Self-Objectification Scale (SOS) is the first scale to be created with two alternative forms for measuring trait and state self-objectification that has undergone analyses for reliability and validity in both men and women. The initial 30 items of the Self-Objectification Scale were created to take into account theoretical and psychometric issues seen in other measures of self-

objectification. Items were created based on the original objectification theory by Fredrickson and Roberts (1997), but they also incorporated later amendments to the theory by other researchers concerning how the objectification theory may present differently in men (Daniel & Bridges, 2010; Grieve & Helmick, 2008; Moradi & Huang, 2008). Items were written on a Likert-type scale to capture self-objectification, operationally defined as people believing that their value comes from their physical appearance. Moreover, items were written to avoid overlap with other appearance-related constructs, including appearance monitoring and body dissatisfaction. The instructions were altered to allow for two forms of the measure with the same items. The State Form (SOS-S) was written to reflect self-objectification *right now* and the Trait Form (SOS-T) to reflect self-objectification *in general.*

Summary of Findings

A pilot study was conducted to examine item wording and preliminary internal consistency. Of the initial 30 items, 8 items were reworded and 2 items were deleted due to poor internal consistency. The pilot study was followed by an online study (Study 1) to examine the factor structure of the SOS, as well as, the reliability and validity of the measure. The SOS was narrowed down to 15 items based on a preliminary item analysis and a series of principle component analyses. Two components were evident for both the SOS-S and the SOS-T which reflected different dimensions of self-objectification; these components were created into two subscales. One appeared to be a more extrinsic dimension: valuing physical appearance because of what it can gain a person, such as friends or financial stability (SOS-Success). The other appeared to be a more intrinsic

dimension: valuing physical appearance in itself (SOS-Self-Worth). The combined items were called SOS-Total.

The SOS and its subscales, for both the SOS-T and the SOS-S, displayed good internal consistency and theoretically consistent dimensionality. The SOS-T demonstrated good test-retest reliability over a two week period. Consistent with the lack of experimental exposure to sexual objectification in this study, there was a strong positive relationship found between the SOS-T and SOS-S with no significant differences between the scores for the combined gender sample.

Overall, the validity analyses supported the convergent validity of the SOS-T. The SOS-T was expected to strongly correlate with another measure of self-objectification, the SOQ. For men and women, the SOS-T-Total and the SOS-T-Self-Worth were found to have a strong relationship with the SOQ. The SOS-T-Success had only a moderate correlation for both genders. Positive correlations between the SOS-T, SOQ, body surveillance, body shame, and appearance anxiety were demonstrated as predicted for both men and women. For both men and women, the SOS-T and the SOQ were found to have the hypothesized negative correlations with self-esteem.

For women, experiences of sexual objectification were expected to have a strong relationship with self-objectification, with self-objectification mediating the relationship between sexual objectification and body shame/appearance anxiety. In partial support of this hypothesis, the SOS-T was found to have significant positive correlations with the measure for sexual objectification; however, the magnitude of the relationships fell in the small to medium range. The SOQ was not found to have a significant relationship. Sexual objectification was not found to have the predicted relationship with appearance

anxiety or body shame; thus, there was no evidence of self-objectification acting as a mediator. The hypothesized relationship between self-objectification and drive for muscularity in men was found for the SOS-T, in particular SOS-T-Self-Worth, but it was not evident for the SOQ.

There was more mixed support for the discriminant validity of the SOS-T. It was expected that the SOS-T would have a stronger relationship with the SOQ compared to measures for body monitoring. For the most part, this aspect of the hypothesis did not find support, except when looking at the relationship between SOS-T-Self-Worth with the Appearance Orientation subscale of the MBSRQ in women. In support of the second part of this hypothesis, the two measures of body monitoring were found to be more closely related to each other than they were to the SOS-T when gender was combined. The SOS-T-Success stood out as the only scale to consistently act as predicted when the analyses were split by gender. It was posited that the SOS-T would have only a weak to moderate relationship with body satisfaction and only a weak relationship with BMI. The results were consistent with this hypothesis for both the SOS-T and the SOQ.

A final experiment (Study 2) was conducted to further assess the validity and reliability of the SOS, looking at the criterion validity of the SOS-T, as well as, the reliability and construct validity of the SOS-S. Contrary to the findings in Study 1, the SOS-S-Self-Worth in the experimental condition displayed poor internal consistency; the other two SOS-S scales continued to show good internal consistency. Both the SOS-S-Total and SOS-S-Self-Worth did not have inter-item correlations consistent with the expected unidimensionality of the scales.

As predicted related to criterion validity, the SOS-T, particularly the SOS-T-Self-Worth, was found to be a significant predictor of eating disorder symptoms in women and muscle dysmorphia symptoms in men. Any predictive power of the SOQ was diminished when it was included in the regression analyses with the SOS-T-Self-Worth. No conclusion could be drawn about the concurrent validity of the SOS-S. The hypothesis that individuals exposed to a sexually objectifying situation should have significantly higher levels of state self-objectification (as measured by the SOS-S and modified TST) did not find support. Significant differences were not found between the two experimental conditions across any of the primary measures (self-objectification, body surveillance, appearance anxiety, drive for muscularity attitudes, and body shame) suggesting that the exposure to objectifying magazine images failed to result in the desired effect.

Implications

The factor structure of the SOS justified the creation of two subscales related to aspects of self-objectification. Across the analyses conducted, there was a trend for the SOS-T-Self-Worth to be more consistent with the tenets of the objectification theory compared to the SOS-T-Success. According to objectification theory, sexually objectifying messages from society are internalized and result in individuals experiencing heightened levels of body monitoring, appearance anxiety, and body shame which increases mental health risks. The SOS-T-Self-Worth demonstrated these predicted relationships. Moreover, the SOS-T-Self-Worth was found to have stronger relationships with variables such as the SOQ and DMS compared to the SOS-T-Success, and in several

cases, it was the only subscale able to demonstrate a significant relationship (e.g., in the prediction of eating disorder and muscle dysmorphia symptoms).

The definition of self-objectification as people believing that their value comes from their physical appearances aligns closely with this internal dimension of self-objectification (SOS-T-Self-Worth) found through the factor analysis. While the SOS-T-Success found partial support, at this time it is unclear if the subscale is another dimension of self-objectification that has yet to be identified and examined. Another possibility is that the subscale has a weaker relationship with the SOQ and does not conform to all of the tenets of the objectification theory because it reflects a different construct.

Dismissing the SOS-T-Success at this time would be premature and may in fact hinder the exploration of a potentially new area of self-objectification. The idea that appearance is valuable because it results in societal gains is a concept that has a strong empirical base. Physical attractiveness has been shown to relate to many advantages for both men and women, such as positive job-related outcomes like getting hired/promoted (Hosada, Stone-Romero, & Coates, 2003) and positive outcomes in relationships like more attention from others (Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000). Thus, it is not surprising that individuals would internalize this very real value that society places on physical appearance.

Not only did the SOS-T-Self-Worth outperform the other SOS-T subscale, this measure was found to align more closely with the objectification theory compared to the original measure of self-objectification: the Self-Objectification Questionnaire. The SOQ did not show the expected relationship with sexual objectification, which is the core

premise of the objectification theory (Fredrickson & Roberts, 1997). Also, self-objectification is theorized to have a unique relationship with muscularity concerns in men (Daniel & Bridges, 2010; Grieve & Helmick, 2008); this relationship was only consistently found for the SOS-T-Self-Worth. Little could be done to compare the performance of the SOS-S with the modified TST, one of the primary current measures of state self-objectification, because of the failed experimental manipulation of self-objectification levels.

There has been a lot of overlap between self-objectification and body surveillance in the assessment of self-objectification. While the objectification theory clearly separates these constructs, others theorists and researchers have blurred these distinctions (Calogero, 2010). The current studies, unfortunately, do not help to clarify this issue. There were mixed results related to the discriminant validity of the SOS-T from body monitoring. It should be noted that a relationship between these variables is consistent with the objectification theory because Fredrickson and Roberts (1997) proposed that body monitoring is the direct behavioral and cognitive result of self-objectification. However, it was hoped that the two self-objectification measures (the SOS-T and SOQ) would be more closely related with each other than the body monitoring measures. One possible explanation of these findings is that there is no substantial difference between these constructs, and they should be treated and theorized as aspects of the same construct. This would be more in support of the competing theory of objectified body consciousness by McKinley and Hyde (1996).

Finally, the SOS brings in to question some of the gender differences theorized and researched in the self-objectification literature. Historically, the objectification

theory was originally proposed to only relate to the experiences of women. As discussed, the theory was eventually broadened to acknowledge that men also experience instances of sexual objectification and that they may internalize these messages. However, researchers typically find lower rates of self-objectification in men compared to women (Moradi & Huang, 2008). In these studies using the SOS-T, men consistently showed no significant differences in trait self-objectification levels compared to women. Moreover, as mentioned previously, the SOS-T was superior to the SOQ in demonstrating the theorized relationship of men's self-objectification with drive for muscularity and muscle dysmorphia symptoms. One explanation is that the current gender differences in the literature may be an artifact of the measurements used, rather than the result of true experiences of men. The two current primary measures used to assess self-objectification, the SOQ and the Surveillance subscale of the OBC, were both originally theorized, created, and normed for women. Also, the rank-ordering format of the SOQ, in particular, is problematic in that men ranking aspects related to muscularity are given lower self-objectification scores (Calogero, 2010).

Limitations

Several aspects of this study may limit the results and applicability of the Self-Objectification Scale. First, because self-objectification peaks in young adulthood, college students were used in the validation samples (Tiggemann & Lynch, 2001). While the psychometric properties of this measure were established for both young men and women, caution should be taken in using this measure in older adults or adolescents until further validation studies can be preformed. Similar cautions should be taken when using

this measure with different ethnicities because the majority of this study's sample identified as White.

Second, a non-clinical sample was used for examining the measure's criterion validity in predicting eating disorder and muscle dysmorphia symptoms. Thus, while a relationship was demonstrated between self-objectification and these variables using the SOS-T, conclusions related to how well this measure can predict actual instances of an eating disorder or muscle dysmorphia cannot be made.

Third, support for the construct validity of the SOS-T as a trait measure was examined over a two week test-retest period. The SOQ was not given at the two week follow up, and no published results were found related to the two week reliability of this measure to act as a comparison. It is unknown how stable this measure is over a more extended period of time, such as that found for the SOQ. Aubrey (2006) found that the SOQ demonstrated adequate test-retest reliability in women over a one year period, but found poor reliability in the measure for men over this time.

Fourth, there are potential limitations related to methodological issues. The two forms of the SOS have identical items, only the instructions differ. Therefore, there was a threat to internal validity caused by testing, such that taking the one form of the SOS may influence individuals' responds on the other form (Kazdin, 2003). Also, the SOS is a self-report measure which, therefore, results in several related problems, including issues with social desirability, response styles, and poor historians (Kazdin, 2003). This latter concern was already brought up in the discussion as to why the expected relationships were not found with the sexual objectification measure. Moreover, because the measures were all self-report questionnaires, there could be a potential threat to

internal validity because of common method variance (Podsakoff, MacKenzie, & Podsakoff, 2012). The experimental manipulation in Study 2 was not found to have the desired effect of inducing a heightened state of self-objectification. This limited the ability to examine the construct validity of the SOS-S related to the scale's sensitivity to changes in self-objectification levels and its theorized relationship with other constructs. Finally, the SOS was created using a combined sample of men and women, assuming an equivalent factor structure across gender. Thus, caution should be taken when interpreting the split gender results because the factor structure and reliability of the measure is unknown when used separately by gender.

Future Directions

The Self-Objectification Scale demonstrated promising psychometrics and construct validity related to the objectification theory. However, because this is a new measure with only initial studies conducted on its reliability and validity, more research needs to be carried out using this scale. The SOQ has a large literature base to support its reliability and validity across a variety of diverse samples (Calogero, 2010); thus, it is unclear if the superiority of the SOS-T seen in these studies was a more stable aspect of the measure or was due to error and/or unique aspects of this sample. The reliability and validity of the SOS-T needs to be replicated in other young adult samples and also needs to be studied using people from different demographic groups, including adolescents, older adults, and other ethnicities.

Further exploration of the State Form of the SOS is needed. Because of the failed experimental manipulation of self-objectification levels, the construct validity of the SOS-S could not be examined. Future studies should attempt similar or more salient

methods (e.g., the swimsuit paradigm of Fredrickson et al., 1998) to induce a state of self-objectification in order to assess the functioning of the SOS-S. Furthermore, the SOS-S-Self-Worth demonstrated questionable internal consistency. Because the scale showed good internal consistency in Study 1, more assessment of the reliability of the measure is needed to determine if this variability is an aspect of the measure itself or the result of random variation based on the sample and experimental design.

Conclusion

This study is important because it offers a new alternative for measuring self-objectification which addresses some of the concerns with the current measures. It is hoped that this measure will aid in the understanding of self-objectification and its manifestation in the different genders because the items were created to reflect the objectification theory in both males and females. Unlike the Self-Objectification Questionnaire, one of the most common current measures of self-objectification, the SOS-T was able to demonstrate the theorized relationship between self-objectification and concerns for muscularity in men. Furthermore, the Self-Objectification Scale has two Likert-type forms which will hopefully reduce the current ambiguity and overlap in the research resulting from the use of body surveillance scales as measures of trait and state self-objectification.

Overall, this series of studies was able to demonstrate the reliability and the validity of the Trait Form of the SOS. Definite conclusions could not be drawn concerning the psychometrics of the State Form. It is hoped that this measure will help improve the assessment of the construct of self-objectification. More accurate assessment can aid researchers' understanding of the process of self-objectification, and

clinicians will be better able to develop preventative measures to inhibit individuals' self-objectification and the many negative mental health risks that result.

APPENDICES

Appendix A
Self-Objectification Scale-State Form

Instructions: Please indicate your agreement with the following statements based on how you feel right now.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1. My personality and character are more important than my physical appearance for attracting a romantic partner.*
2. How my body looks will determine how successful I am in life.
3. My ability to do well at my job is based on how I look to others.
4. What my body can do is more important to me than its size and shape.*
5. I need to look my best because others will notice.
6. My looks are the most important aspect of myself.
7. I value my body's appearance more than its strength and stamina.
8. I do not need to look good to achieve my goals in life.*
9. The aspects of my body that can be viewed by others are the ones I value most.
10. I can attain my career goals regardless of how my body looks to others.*
11. For a potential romantic partner to want me, I must be physically attractive.
12. My level of sexual appeal will determine my future financial success.
13. The aspects of my body that cannot be viewed by others are the ones I value most.*
14. My current financial stability is based on how my body appears to others.
15. I will be safer in this world if I am sexually appealing.
16. My body is my most important asset.
17. My economic prospects are determined by my looks.
18. It is important that others find me physically appealing.
19. How my body appears to others will determine my life experiences.
20. My physical appearance is closely related to the power that I hold in society.
21. My social prospects are determined by my non-physical characteristics.*
22. I hope that others appreciate my looks.
23. My physical appearance has little influence on my sense of well-being.*
24. My health is more important than my physical appearance.*
25. It is okay for others to look at and evaluate me based on my physical appearance.
26. Being physically attractive will determine how many friends I have.
27. My sense of self-worth is based largely on my physical appearance.
28. I value my physical appearance over my physical comfort.
29. My body's abilities are more important than my body's appearance.*
30. My happiness is dependent on my physical appearance.

*Indicates reversed scored items

Appendix B
Self-Objectification Scale-Trait Form

Instructions: Please indicate your agreement with the following statements based on how you feel in general.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1. My personality and character are more important than my physical appearance for attracting a romantic partner.*
2. How my body looks will determine how successful I am in life.
3. My ability to do well at my job is based on how I look to others.
4. What my body can do is more important to me than its size and shape.*
5. I need to look my best because others will notice.
6. My looks are the most important aspect of myself.
7. I value my body's appearance more than its strength and stamina.
8. I do not need to look good to achieve my goals in life.*
9. The aspects of my body that can be viewed by others are the ones I value most.
10. I can attain my career goals regardless of how my body looks to others.*
11. For a potential romantic partner to want me, I must be physically attractive.
12. My level of sexual appeal will determine my future financial success.
13. The aspects of my body that cannot be viewed by others are the ones I value most.*
14. My current financial stability is based on how my body appears to others.
15. I will be safer in this world if I am sexually appealing.
16. My body is my most important asset.
17. My economic prospects are determined by my looks.
18. It is important that others find me physically appealing.
19. How my body appears to others will determine my life experiences.
20. My physical appearance is closely related to the power that I hold in society.
21. My social prospects are determined by my non-physical characteristics.*
22. I hope that others appreciate my looks.
23. My physical appearance has little influence on my sense of well-being.*
24. My health is more important than my physical appearance.*
25. It is okay for others to look at and evaluate me based on my physical appearance.
26. Being physically attractive will determine how many friends I have.
27. My sense of self-worth is based largely on my physical appearance.
28. I value my physical appearance over my physical comfort.
29. My body's abilities are more important than my body's appearance.*
30. My happiness is dependent on my physical appearance.

*Indicates reversed scored items

Appendix C

Revision of Self-Objectification Scale after Pilot Study with Items Deleted and Reworded

1. My personality is more important than my physical appearance for attracting a romantic partner.*

2. How my body looks will determine how successful I am in life.

3. My ability to do well at my job is based on how others view my physical appearance.

4. My body's size and shape are not important to me.*

5. I need to look my best because others will notice.

6. My looks are the most important aspect of myself.

7. I value my body's appearance more than its strength and stamina.

8. I do not need to look good to achieve my goals in life.*

9. The aspects of my body that can be viewed by others (i.e., my weight, facial features, shape) are the ones I value most.

10. I can attain my career goals regardless of how my body looks to others.*

11. For a potential romantic partner to want me, I must be physically attractive.

12. My level of sexual appeal will determine my future financial success.

13. The aspects of my body that cannot be viewed by others (i.e., my health, energy level, physical abilities) are the ones I value most.*

14. My current financial stability is based on how my body appears to others.

15. Life will be good if I am sexually appealing.

~~16. My body is my most important asset.~~

17. My future financial stability is determined by my looks.

18. It is important that others find me physically appealing.

19. How my body appears to others will determine my life experiences.

20. My physical appearance is closely related to the power that I hold in society.

21. My social prospects are determined most by my non-physical characteristics (i.e., personality, intelligence, creativity).*

22. I hope that others appreciate my looks.

~~23. My physical appearance has little influence on my well-being.*~~

24. My health is more important than my physical appearance.*

25. It is okay for others to look at and evaluate me based on my physical appearance.

26. Being physically attractive will determine how many friends I have.

27. My sense of self-worth is based largely on my physical appearance.

28. I value my physical appearance over my physical comfort.

29. My body's abilities are more important than my body's appearance.*

30. My happiness is dependent on my physical appearance.

Bolded items have been reworded and ~~struckthrough~~ items deleted

*Indicates reversed scored items

Appendix D

Final Revision of Self-Objectification Scale after Study 1 with Items Deleted

~~1. My personality is more important than my physical appearance for attracting a romantic partner.*~~

2. How my body looks will determine how successful I am in life.

3. My ability to do well at my job is based on how others view my physical appearance.

~~4. My body's size and shape are not important to me.*~~

~~5. I need to look my best because others will notice.~~

~~6. My looks are the most important aspect of myself.~~

7. I value my body's appearance more than its strength and stamina.

8. I do not need to look good to achieve my goals in life.*

9. The aspects of my body that can be viewed by others (i.e., my weight, facial features, shape) are the ones I value most.

~~10. I can attain my career goals regardless of how my body looks to others.*~~

~~11. For a potential romantic partner to want me, I must be physically attractive.~~

12. My level of sexual appeal will determine my future financial success.

13. The aspects of my body that cannot be viewed by others (i.e., my health, energy level, physical abilities) are the ones I value most.*

~~14. My current financial stability is based on how my body appears to others.~~

~~15. Life will be good if I am sexually appealing.~~

~~16. My body is my most important asset.~~

17. My future financial stability is determined by my looks.

~~18. It is important that others find me physically appealing.~~

19. How my body appears to others will determine my life experiences.

20. My physical appearance is closely related to the power that I hold in society.

~~21. My social prospects are determined most by my non-physical characteristics (i.e., personality, intelligence, creativity).*~~

~~22. I hope that others appreciate my looks.~~

~~23. My physical appearance has little influence on my well-being.*~~

~~24. My health is more important than my physical appearance.*~~

~~25. It is okay for others to look at and evaluate me based on my physical appearance.~~

26. Being physically attractive will determine how many friends I have.

27. My sense of self-worth is based largely on my physical appearance.

28. I value my physical appearance over my physical comfort.

29. My body's abilities are more important than my body's appearance.*

30. My happiness is dependent on my physical appearance.

~~Struckthrough~~ items have been deleted

*Indicates reversed scored items

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