So You Think You've Got Problems: Interpersonal Influence on Women with Low Appearance

Self-Esteem within the Context of Self-Affirmation

by

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Abstract

The influences of interpersonal interactions on psychological constructs have been studied extensively in the research literature. However, due to the inherent complexities involved in such interactions, a comprehensive understanding of such relationships is currently limited. Self-affirmation theory provides a framework for understanding the way in which individuals cope with threats to the self in everyday life circumstances. Self-affirmation theory states that when individuals are exposed to a threat to the self, they are motivated to affirm another aspect of their self-worth in an attempt to maintain a sense of self-integrity. The current study investigated the relationship between self-affirmation and self-esteem during an ecologically valid interpersonal interaction. Emphasis was placed on exploring the utility of self-affirmation theory in understanding threats to appearance self-esteem. Ninety-eight female undergraduates participated in the current study during which they took part in a videotaped role play with an experimenter. During the role play, an appearance or academic-related topic was discussed, after which participants then viewed their role play. Results of the study provided partial support for self-affirmation theory; specifically, individuals who discussed an appearance-related topic and had low appearance self-esteem responded by investing their stake in an appearance domain of self-worth, contrary to the basic premise of self-affirmation theory. Individuals who discussed an academic-related topic also did not decrease stake in the academic domain of self-worth. However, individuals in both groups re-invested stake generally in other domains of self-esteem, as predicted by self-affirmation theory. Furthermore, exploratory analyses revealed that the study has implications for understanding the enduring quality of body image concerns as well as interventions designed to improve such concerns

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Although research has focused on understanding the role and impact of social interactions on psychological constructs, the complexities involved in understanding external influences on individual behaviour have made this task difficult. As a result, researchers have developed encompassing theories of behaviour in an attempt to explain the motivations and consequences of human behaviour. Self-Affirmation theory, in particular, has attempted to explicate an understanding of the way in which individuals cope with threats to the self in everyday life circumstances.

Steele (1988) initially proposed self-affirmation theory as an explanation of a "self-system" that is responsible for explaining the behaviour of individuals, as well as the individuals' understanding of the world. The theory proposes that individuals are motivated to maintain the fundamental integrity of the self, specifically, the central belief that one is a good person (Sherman & Cohen, 2006). Furthermore, when an individual's sense of self-worth is threatened, they respond in such a way as to restore their self-worth. While defensive responses like avoidance can serve to reduce such threats, self-affirmations provide another, more positive approach to reducing threats to self-integrity (Steele, 1988). For example, if an individual experiences a threat to their academic values, instead of simply ignoring the threat, it may be more helpful to acknowledge and address the existence of the threat. Further, according to the theory, individuals would also engage in self-affirmation by investing stake in alternative self-resources such as relationship values, in order to maintain self-integrity.

According to Steele's theory, people can adapt to self-threat through utilizing actions that affirm the general integrity of the self, but do not necessarily directly respond or address the

provoking threat (Steele, 1988). Steele surmises that when an aspect of an individual's self-concept comes under threat, the primary self-defensive goal is not to resolve the primary threat, but to maintain the integrity of the self. Further, any motivation that the individual has toward responding to the specific self-threat may be overridden by subsequent affirmation of a more general self-concept, or a similarly important yet different aspect of the self-concept.

Steele developed self-affirmation theory through conceptualizing cognitive dissonance in a manner that was inconsistent with thinking at the time. Cognitive dissonance theory was proposed by Festinger (1957; as cited in Blanton, 1997) who asserted that an individual holding two inconsistent cognitions would experience the psychological state of cognitive dissonance, which motivates subsequent efforts to reduce dissonance and achieve consonance. Where cognitive dissonance places focus on maintaining psychological consistency, self-affirmation studies suggest that people are motivated to maintain self-integrity. For example, if an individual experiences a threat to their political values, cognitive dissonance theory would suggest that individuals would subsequently adapt their political values in order to decrease psychological discomfort that they may experience. Self-affirmation theory would hold that individuals are adapting their political values in order to maintain and protect their sense of self. Further, people should be able to tolerate psychological inconsistency if their self-integrity is buffered through the affirmation of another domain of self-identity (Sherman et al., 2006).

One of the initial experiments (Steele, Hopp, & Gonzales, 1986, as cited in Steele, 1988) that provided support for self-affirmation illustrates the key concepts necessary for understanding the theory. In this study, participants rated and then ranked 10 popular record albums in order of preference. Participants were given the opportunity to select either the fifth- or sixth-ranked album to take home with them, resulting in a dissonance-provoking choice. This

choice resulted in dissonance because both choices were not ideal; thus, the album that was chosen was not perfect yet the rejected album would still have some desirable characteristics that must be ignored once the choice is made. According to the theory of cognitive dissonance, individuals would typically increase their evaluations of the chosen album and decrease their evaluation of the rejected album. Half of the participants had previously been selected for holding strong scientific values, and for indicating on a selection questionnaire that a lab coat symbolized their values and professional goals. The other half of the participants closely identified with business values and goals. Following their selection of an album, half of the participants in each group were instructed to put on a lab coat for another part of the experiment. After 10 min passed, the participants again rated the albums, resulting in a measure of whether participants had subsequently rationalized their album choice by changing their ratings.

Results indicated that for science-oriented participants, putting on the lab coat significantly reduced their dissonance over the choice of record albums, that is, these participants did not defensively change their attitudes to make them concordant with their choice. For the business-oriented participants and the science-oriented participants that did not put on the lab coat, the chosen album rating was inflated, and the disregarded album decreased in rating. Thus, according to the authors, the lab coat served to affirm a central value orientation for these participants and these participants did not defensively change their attitudes to make them consistent with their choice.

There are four primary tenets of self-affirmation theory that have been outlined by Sherman et al. (2006) as follows:

1. People are motivated to protect the perceived integrity and worth of the self. This tenet reflects the most basic premise of self-affirmation theory and pertains to the various components

that make up the domains available to the individual, or contingencies of self-worth (Crocker & Wolfe, 2001). The self as conceptualized within self-affirmation theory is comprised of various domains, including an individual's roles, values, social identities, belief systems, and goals (Sherman, 2006). Such systems are activated when one is exposed to a threat to an important aspect of the self that results in subsequent responses necessary to maintain initial self-worth.

2. Motivations to protect self-integrity can result in defensive responses. As the domains of the self are integral to the individual, when a particular domain is threatened, individuals are motivated to repair the threat, often leading to defensive responses. Such responses are able to diminish the threat and restore integrity of the self and are often automatic or unconscious, usually occur very rapidly. Particularly evident in self-affirmation theory are defensive processes where individuals may devalue the importance of domains where they fail, thereby serving to sustain self-worth, but subsequently preventing further possibility of improvement in the devalued domain (Major, Spencer, Schmader, Wolfe, & Crocker, 1998).

3. The self-system is flexible. This tenet reflects the notion that people naturally compensate for perceived or actual failures in their lives by focusing on successes in other domains of their life.

4. People can be affirmed by engaging in activities that remind them of "who they are". This serves to reduce the potential impact of threats to self-integrity. This tenet reflects the notion that when individuals are exposed to a threat to their self-worth, reminding the individual of their core qualities can allow for individuals to be reminded of who they are, and thereby solidify their sense of self-integrity. In this situation, a self-affirmation may serve as a prominent reminder of the core qualities of the self. When such core domains are affirmed, threatening

information becomes less evocative as the individual is reminded of a more comprehensive understanding of their self. Self-affirmation theory has been outlined as a potentially comprehensive method of understanding human behaviour, specifically in regard to threatening stimuli. Further, the research conducted thus far regarding the utility of the theory lends significant support to its usefulness in explaining such behaviours.

Self-Affirmation Research

From its outset, self-affirmation theory has been used to explain a number of facets of human behaviour. A great deal of research exploring self-affirmation theory has been focused on the theory's utility as an approach to undermining defensive processing of health risk information. Importantly, studies have shown that in general, groups with the highest health risk are more motivated to respond defensively to threatening information and are the least likely to accept or respond to a threatening health message (Ditto & Lopez, 1992). Given that self-affirmation theory and processes are suggested as an alternative to defensive processing, it is prudent that researchers have focused on assessing the interactive effects that self-affirming may have on reducing defensive responses to health information.

One study examining smoking behaviours (Armitage, Harris, Hepton, & Napper, 2008) found that a self-affirmation manipulation, where participants affirmed the personal value of kindness, resulted in significant increases in the acceptance of information regarding the risks of smoking, their intentions to change behaviours, as well as subsequent smoking behaviours at follow-up. Self-affirmation has also been shown to promote acceptance of threatening Type 2 Diabetes information as well as willingness to complete risk tests for Diabetes. The results of this study (van Koningsbruggen & Das, 2009) showed that allowing participants to self-affirm subsequently decreased the likelihood that they would derogate a threatening message, increased

intentions and subsequent completion of a risk test. Allowing the participants to self-affirm seems to reduce defensive responses, thereby increasing acceptance of a threatening message, as well as behavioural intentions.

Jessop, Simmonds and Sparks (2009) examined the effect of self-affirmation on the subsequent behaviours of sunbathers who were informed of the possible health risks of sun exposure. Participants took part in a *value*, *kindness*, or *positive* trait affirmation task or no-task control condition prior to reading a brochure containing sun exposure health-risk information. Results indicated that those participants in the self-affirmation conditions engaged in less defensive processing of the provided health-risk information than those participants in the control condition. Further, participants who self-affirmed *positive* traits were more likely to request a sample of sunscreen after the manipulation than those in the other affirmation conditions. Although behavioural indicators of change were not evident in all self-affirmation conditions, the results of this study increase support for the notion that self-affirming reduces the effects of defensive processing and may lead to behavioural change.

The processes by which self-affirmation reduces defensive responses to threatening health information have not yet been made clear. However, there is evidence that the reduction of defensive responses occurs at an implicit level of processing. One study (van Koningsbruggen, Das & Roskos-Ewoldsen, 2009) exposed participants to threatening health information that linked coffee consumption to health problems. Participants were grouped into high-relevance (coffee drinkers) and low-relevance (noncoffee drinkers) groups and were given the chance to self-affirm or not self-affirm personal values prior to reading the health information. After the manipulation, participants completed a lexical decision task designed to determine the accessibility of threat-related cognitions. Results indicated that among participants

for whom the health information had high-relevance, self-affirming increased accessibility of threat-related cognitions and further prompted intentions to improve risky behaviours. The authors concluded that self-affirmation serves to increase implicit responsiveness to threatening health information among those for whom the information is relevant.

In a related study conducted by Klein and Harris (2009), women who drank alcohol read an article that linked alcohol use to developing breast cancer. They then completed a visual-dot-probe task containing threat and nonthreat words from the article. For non-self-affirmed women who drank moderately heavy amounts of alcohol an attentional bias away from the threatening words in the article was observed, suggesting avoidance of the perceived threat. Conversely, those women who were moderately heavy drinkers and had self-affirmed by selecting and writing an essay about an important value, showed a bias toward the threatening words. Thus, self-affirmation seems to facilitate implicit processing of threatening messages.

A series of studies (Sherman et al., 2009) were conducted to explore whether self-affirmation can take place without awareness and, further, what effects awareness may have on the affirmation process. Two studies utilized implicit self-affirming primes where participants completed sentence-unscrambling tasks that corresponded to an important value identified by the participant. Results indicated that the participants' self-affirming behaviours took place without awareness and that they were unaware of the influence of self-affirmation on their behaviours. A subsequent study indicated that when participants reported awareness of self-affirmation or were told that self-affirmation was designed to increase self-esteem, the effects of self-affirmation decreased or were eliminated altogether. These findings lend support to the notion that self-affirmation is an automatic cognitive process. However, it is important to note that these studies implemented procedures that required participants to self-affirm by identifying an important

value and making it salient by reflecting on the value. Hence, it is necessary that research explore the process of self-affirmation in naturalistic settings, as opposed to the somewhat contrived methods used currently.

Though little research has been done exploring the physiological effects of self-affirmation, it is worth mentioning results of preliminary studies related to the benefits of behaviour change. One such study (Creswell et al., 2005) found that participants who were able to affirm personal values showed significantly lower cortisol responses to stress as compared to control participants who did not affirm personal values. While the cortisol results were not moderated by reported self-resources, the study found that the relationship between value affirmation and participant perceived stress responses was moderated by the self-resources that participants endorsed (e.g., trait self-esteem and optimism). That is, participants who reported high self-resources and had self-affirmed personal values reported less perceived stress than nonaffirmed participants with lower self-resources. These findings suggest differences in the physiological and psychological processing of affirmation related information.

Another study (Sherman, Bunyan, Creswell & Jaremka, 2009) examined the changes in levels of ephinephrine or norepinephrine (urinary catecholamine excretion), an indicator of sympathetic nervous system activation, in undergraduate students. Levels of urinary catecholamine excretion were measured at baseline 14 days prior to students' most stressful examination and on the morning of the examination. Students in the self-affirmation condition wrote two essays about important values while those in the control condition wrote essays about their least important value. Results indicated that epinephrine levels from baseline to examination increased for non-self-affirmed students while self-affirmed students exhibited no difference in nervous system activation. Further, students who were the most concerned about

negative results on their examinations exhibited the strongest self-affirming effect, suggesting those students who were most psychologically vulnerable to the threat to self were most protected by the self-affirming buffer.

To summarize thus far, it is clear that self-affirmation theory has implications for behaviour change, particularly through the reduction of defensive processing. As well, the aforementioned research suggests that self-affirmation may be a natural cognitive process serving to protect self-integrity, as evident in research indicating that self-affirmation takes place without awareness. Further, although physiological evidence thus far is lacking, preliminary research indicates the pervasive effects that self-affirming can have on regulating biological stress responses. While the research presented thus far is promising, an understanding of the specific components of the theory has not yet been solidified, the implications of which will be discussed next.

Same- or Different-Domain Affirmations

An inconsistency present within self-affirmation theory concerns self-affirmations that increase, rather than decrease, bias and subsequently solidify resistance to change (Sherman et al., 2006). The primary occurrences of such affirmations are those where the affirmed domain is the same as the domain from which the threatening event or information originates. While different-domain affirmations have been shown to decrease biases and inflexibility, same-domain affirmations have been shown to increase participants' sense of self-confidence and certainty, thereby increasing bias and inflexibility and ultimately resulting in defensive processing. Thus, same-domain affirmations exhibit effects in opposition to different-domain affirmations (Blanton, Cooper, Skurnik, & Aronson, 1997). For example, prior to reading a report that criticizes evidence supporting global warming, an environmental supporter might

reflect on personal values of the importance of the cause of environmentalism, which serves as a form of self-affirmation (Sherman et al., 2006). In cases such as this, domain-relevant affirmations would increase resistance to change, probably because the individual's commitment to the value, and subsequently their self-identity, is highlighted. This reasoning suggests that if behaviour and attitude change is a goal of an intervention, an effective strategy would be the somewhat counterintuitive one of affirming domains unrelated to a threat versus targeting the domain of threat.

One set of studies was conducted to investigate the direction of focus of self-affirmation domain. The authors hypothesized that when individuals were presented with a threat to a specific domain of the self, individuals would neglect self-affirming values in the threatened domain and instead choose to focus on affirming unrelated domains (Aronson, Blanton, & Cooper, 1995). Participants completed a multiple-choice personality test and then were required to write a dissonance provoking essay that was intended to threaten their sense of compassion. Subsequently, participants indicated how much feedback they desired from certain categories of the personality test, one of which was compassion. Participants made this choice either before or after an attitude measure that allowed for self-affirmation. Results showed that participants who experienced a greater threat to self during the dissonance provoking procedure were less interested in receiving feedback about their compassion, the threatened domain. As well, participants that self-affirmed after requesting feedback requested about half as much compassion feedback than those who self-affirmed prior to requesting feedback. The second study conducted followed a similar methodology and further suggested that self-affirmation can result in individuals seeking to modify their self-concepts by divesting their identification with aspects of the self that violate threatened behaviours and identifying with aspects of the self that

justify the threatening behaviour. These results lend support to the notion that same-domain affirmations may result in rigidity of thinking and lead to decreases in flexibility of thought or behaviour change.

On the other hand, some research has suggested that same-domain affirmations are necessary for maintenance of self-integrity. Given that the maintenance of self-integrity is a core tenet of self-affirmation theory, research in this area is essential to understand. Research in self-esteem maintenance showed that threats directed toward an individual's sense of belonging resulted in more same-domain affirmations, while threats to an individual's intelligence resulted in more different-domain affirmations (Knowles, Lucas, Molden, Gardner, & Dean, 2010). The study also showed that different-domain strategies of affirmation were effective at repairing threats to intelligence, but not effective at repairing threats to belonging. This preliminary research suggests that there may be differences in the consequences that same- or different-domain affirmations may have on individuals, depending on the relevance or importance of the value being threatened.

Research focusing on the outcome of same- or different-domain affirmations is important for understanding the possible utility of self-affirmation theory in practice both for clinicians and researchers. Thus far, the research literature has not been able to adequately provide an understanding of the more complex functioning of the self-affirmation process, making the utility of the theory in applied situations limited. Hence, it is necessary that future research be designed to explore the conditions that result in same- or different-domain affirmations. Further, as it is evident that self-affirmations have consequences for the well-being of the individual, it is necessary to explore the influences of the process on related cognitions that may be influenced by self-affirming.

Self-Affirmation and Self-Esteem

Research clearly indicates that self-affirmation theory has implications for the study of behaviour and attitude change. Given that the theory focuses on the maintenance of self-integrity, it follows that self-affirmation may also influence other conceptualizations of the self such as self-esteem. Self-esteem can be broadly defined as "a favourable global evaluation of oneself" (Baumeister, Smart & Boden, 1996, p. 5). Based on self-affirmation theory, one might presume that individuals with high self-esteem would be more likely to self-affirm, as well as to derive the most benefit from the process, largely because they have more resources from which to draw from in order to self-affirm. Research indicates that this general idea is true, but that the influence of self-esteem on self-affirmation is more complex than intuitively thought. Further, the directionality of the relationship has not been determined; that is, whether self-esteem influences self-affirming behaviours or whether self-affirming leads to changes in self-esteem.

Steele, Spencer, and Lynch (1993) investigated the relationship between self-esteem and self-affirmation by examining individuals' tendency to rationalize decisions that were threatening to their self-esteem. It was hypothesized that individuals with high self-esteem would not rationalize their decisions as much as individuals with low-self esteem because they had more favourable self-concepts with which to self-affirm and repair self-integrity. This was supported in two experiments conducted by the authors that evaluated self-esteem, but only when participants were made to focus on their self-concepts. The results of this study suggest that individuals with higher self-esteem may be more likely to self-affirm when prompted and benefit to a greater degree than individuals with low self-esteem.

In regard to perceiving threat, an integral component of self-affirmation processes, Spencer, Fein and Lomore (2001) found that individuals with low self-esteem tend to lower their

own ratings of their performance when they expect immediate feedback in an attempt to lessen the threat inherent in such feedback. Importantly, when individuals with low self-esteem are self-affirmed they do not lower their ratings to the same degree, suggesting that self-affirmation could have implications for improving self-esteem through improving perceptions of performance. Further, the study showed that the tendency to engage in upward social comparisons is increased for people who are self-affirmed, making them less likely to engage in downward social comparisons. The authors suggest that affirming other aspects of the self allows individuals to cope with threats to interpersonal aspects of the self.

Some researchers have suggested that the connections between self-affirmation and self-esteem lie in their similarities. Tesser (2000) questioned whether these processes shared the commonality of maintaining positive affect or mood, and thus were similar constructs. While these positive effects seem plausible, self-affirmation studies tend to find that affirmation of important values has no effect on self-reported mood (Fein & Spencer, 1997). Further, manipulating mood does not produce the same effects as self-affirming (Steele et al., 1993).

Self-esteem has also been proposed as a possible mediator in the process of self-affirmation (Sherman et al., 2006), particularly state self-esteem. Here, it is proposed that state self-esteem may be increased by self-affirming, thereby allowing individuals to be open to accepting threatening information that may otherwise lower their state self-esteem. Fein and Spencer's research (1997) gave participants positive personality feedback and found that self-affirming in this manner increased state self-esteem. They also found a decrease in stereotyping that was mediated by the increase in state self-esteem. Other studies, however, have not found self-affirming to increase self-esteem (Schmeichel & Martens, 2005). These authors concluded that self-affirmations can have effects similar to self-esteem effects, but without influencing self-

esteem, suggesting that the cognitive processes involved in self-esteem and self-affirmation may be at least somewhat independent.

Based on the presented literature, it is apparent that a full understanding of the relationship between self-affirmation theory and self-esteem has not been reached. Although researchers have attempted to examine possible relationships by way of several different approaches, more research examining the associations between these two constructs is evidently necessary. Further, research thus far has focused on general conceptualizations of self-esteem, and not explored specific constructs of self-esteem that may directly related to threatened domains of self-worth. While the connections between self-affirmation and self-esteem are not yet clear, another conceptualization of self-esteem may better relate to the specific components of self-affirmation theory and improve understanding of the process and consequences of self-affirmation.

Contingencies of Self-Worth

While examining the construct of self-esteem as generally defined has not led to conclusive results, examining other theoretical notions of self-esteem, such as contingencies of self-worth, may be helpful in understanding the process of self-affirmation. Crocker and Wolfe (2001) developed a conceptualization of self-esteem known as contingent self-worth in an attempt to address possible problems with treating self-esteem as a stable characteristic, particularly in research. These researchers consider the specific and varied contingencies on which an individual bases their self-esteem and the possible instability of self-esteem as integral to the understanding of the construct. A contingency is defined as the "domain or category of outcomes on which an individual has staked his or her self-esteem" (Crocker & Wolfe, 2001). As well, the theory maintains that an individual's self-worth is reflected in their perceptions of

their ability to live up to their standards in this particular domain. Further, much like self-affirmation theory, contingencies of self-worth represent the domains where people would be most likely to have their self-esteem threatened by perceived or experienced failures (Crocker, Luhtanen, Cooper & Bouvrette, 2003). According to Crocker et al. (2001), individuals who experience negative outcomes in their contingent domains are likely to exhibit defensive responses; when unable to cope with defensive responses, reported self-esteem should decrease. Crocker et al. (2003) developed a psychometric measure called the Contingencies of Self-Worth Scale (CSWS) which is comprised of the following seven domains of contingent self-worth: competition, approval from others, family support, appearance, god's love, virtue, and academic competence. Along with identifying the degree to which an individual stakes their self-worth in a particular domain, this measure could be useful in measuring the degree to which an individual changes their stake in a particular domain of self-worth, thereby providing tangible evidence of self-affirmation.

Research exploring contingencies of self-worth has shown relationships between contingent self-esteem and emotional and behavioural indicators, suggesting that self-esteem is both variable and influential. For example, one study exploring the role of contingent academic competence self-worth in university students found that self-esteem, affect, and identification with one's major increased on days students received good grades and decreased on days they received poor grades; further, basing self-esteem on academic competence was shown to moderate the effect of bad grades (Crocker, Karpinski, Quinn, & Chase, 2003). A similar study found that following a failure manipulation, individuals with low contingent academic self-worth and low general self-esteem downplayed the importance of appearing competent to others and associated themselves with failure at an implicit level. Interestingly, those individuals with high

general self-esteem who had high contingent academic self-esteem evidenced an increase in state self-esteem and desire to appear competent following failure feedback (Park, Crocker, & Keifer, 2007). This finding presents interesting comparisons to self-affirmation theory as it suggests the existence of individual differences in affirming cognitions that appear to be dependent on initial levels of self-esteem, and further suggests differential same or different-domain affirmations.

Contingent self-esteem has also been observed to influence depressive symptoms. For example, one study (Sargent, Crocker & Luhtanen, 2006) explored depressive symptoms in college students throughout their first semester of college. Their results indicated that higher levels of contingencies that were external to the self (e.g., approval from others, appearance, competition, academic competence) predicted an increase in depressive symptoms throughout the first semester of college even when controlling for initial levels of depressive symptoms, social desirability, gender, and race. They also found that internal contingencies of self-worth (God's love, virtue) were not associated with levels of depressive symptoms. A similar study explored the role of contingent self-esteem in depressive symptoms of adolescents and found that contingencies predicted change in depressive symptoms over time. Further, depressive symptoms did not predict change in contingencies over time, providing support for contingencies as a predictor of depressive symptoms (Burwell & Shirk, 2006).

Research exploring more motivation-based behavioural outcomes of contingent self-esteem further lends support for the influences and impact of contingent self-esteem. One group of studies explored the social motivations of individuals with high and low self-esteem following a threat to a contingent self-worth domain (Park & Maner, 2009). Results indicated an interaction between an individual's trait self-esteem and contingencies of self-worth that predicted whether individuals desired social contact following a self-threat. Individuals with

high self-esteem who had high appearance contingent self-worth indicated that they wished to connect with close others following a threat to their physical attractiveness. Conversely, individuals with low self-esteem who had high appearance contingent self-worth indicated that they wished to avoid social contact, instead focusing on less interpersonally focused coping strategies such as enhancing physical attractiveness. Again, the contingent self-esteem research suggests differences in affirmation-type cognitions based on initial self-esteem levels, and differing behavioural consequences that presumably result from these differences.

A similar study explored the role of contingencies of self-worth in regard to relationship-specific contingent self-worth; specifically, relationships with fathers (Horberg & Chen, 2010). The results of a series of studies showed that activating a schema for fathers resulted in participants modifying their contingencies of self-worth to reflect greater stake in domains where their fathers would want them to excel. As well, perceived failures in these activated domains resulted in decreases in feelings of acceptance and closeness in that relationship. The findings of this study reflect the flexibility of contingent self-worth, the pervasive changes that can occur in domains of self-worth when important schemas of the self are activated, and the effects that can occur as a result of not meeting expectations inherent in the contingent domains. It is clear that contingent self-esteem and self-affirmation may have significant consequences for both mood and behaviour change; hence, it is necessary to explore these constructs in other domains of self-worth.

Self-Affirmation and Body Image

The majority of self-affirmation research has focused on behaviourally based explorations such as the health-risk acceptance literature previously mentioned. More recently, researchers have started to explore other applications for which self-affirmation findings may

prove useful, such as the study of body image. Body image refers broadly to an individual's attitudes and perceptions of their physical appearance, including body weight and shape, as well as other physical characteristics (Cash, Morrow, Hrabosky, & Perry, 2004). Moreover, in relation to self-affirmation theory, an individual's perception of their body image can pose a significant threat to the self in individuals.

It has been established that the understanding of the self has implications for an individual's body image. Vartanian (2009) found that individuals who reported lower clarity of self-concept displayed a greater degree of internalization of societal standards for women, as well as body image and dieting concerns. Further, the associations observed were found to be mediated by factors such as body weight contingencies of self-worth. The authors thus concluded that a woman's self-concept can be integral in making her vulnerable to the internalization of societal standards, and subsequently contributing to the development of body image problems.

Bergstrom, Neighbors and Malheim (2009) suggested that self-affirmation theory can be used as a framework that would provide an explanation for any observed response (e.g., a decrease in body-esteem) following a body image threat, such as exposure to thin images. That is, if an individual feels threatened by images of thin models, resulting negative cognitions about their body may be compensated for by reaffirming other aspects of the self; for example, that they are a good student. In a study conducted by Bergstrom et al. (2009), women with low and high BMIs were exposed to pictures of thin models. Results indicated that women with higher BMIs increased their ratings of the importance of nonappearance dimensions of self-worth after viewing the models, suggesting evidence that these women self-affirmed. For women with low BMIs, the same relationship was observed, but their ratings were not as discrepant as the high

BMI group; that is, they did not rate nonappearance domains of self-worth as important after viewing models. This study provides evidence that some individuals threatened with an appearance-related threat will self-affirm to a different degree depending on individual differences, a finding that warrants further investigation and replication.

Persuasive evidence providing support for the utility of self-affirmation in the understanding of body image comes from a study examining the effect of a self-esteem threat and thin models on body image (Jarry & Kossert, 2007). Participants were exposed to conditions where they received success or failure feedback upon completion of a written test and then viewed media images of thin models. Participants who received failure feedback indicated that they felt more satisfied about their appearance than women who received success feedback. The authors suggest that exposure to media images of thin women may lead women that receive self-esteem threats to use appearance-related domains as another source of self-worth. That is, women would be maintaining their global esteem – or self-integrity – through what they authors' term body image compensatory self-enhancement.

The self-affirmation literature becomes particularly compelling when considering strategies for body image intervention. Although body image and eating pathology are some of the most prevalent psychological issues for women and adolescents, there exist barriers to treatment and high rates of recurrence in the treatment of these concerns (Fairburn, Cooper, Doll, Norma, & O'Connor, 2000). As such, researchers have attempted to develop programs designed to improve body image and self-esteem, and help prevent individuals from developing disordered eating or body image pathology. However, the efficacy and effectiveness of such interventions often produces mixed results. For example, Park, McSweeney and Yun (2009) examined a public service announcement displaying images of realistic female body types, with

text emphasizing the diversity of body shape. Interestingly, exposure to the ad did improve young women's body satisfaction, but only in women with healthy body image. For women that already had low body satisfaction, the authors' surmised that the messages in the advertisement interacted with the "predisposition to further deteriorate body satisfaction and the norm of the ideal female body" (Park et al., 2009, p. 677).

The latter finding of this study suggests a tendency for exposure to body image interventions to cause more negative affect than positive, particularly for women who already have problematic body concerns. In fact, self-affirmation theory would suggest that the advertisement in the aforementioned study would act as a threat to self, and because poor body image is already salient in the individual, any attempt to self-affirm is directed to the same domain. As previously discussed, same-domain affirmations have been shown to be problematic and lead to negative outcomes.

A review conducted by Yager and O'Dea (2008) examined 27 large, randomized and controlled health promotion and health education programs that intended to improve body dissatisfaction as well as dieting and disordered eating behaviours in college students. The results of the analysis revealed that information-based, cognitive-behavioural, and psychoeducational approaches to improving body image were the least effective. The authors recommended that media literacy and dissonance-based education approaches were most effective, and that programs that emphasized self-esteem should be used.

The notion of a dissonance-based intervention program for improving body image closely resembles the basics of self-affirmation theory. Dissonance-based programs include interventions where adolescents with body image concerns engage in verbal, written, and behavioural exercise in which they critique the internalized thin ideal. This occurs through such

activities as role plays or essays that are counter attitudinal in nature. Theoretically, these activities allow for psychological discomfort to occur, motivating participants to reduce belief in the thin ideal, thus decreasing body dissatisfaction (Stice, Rohde, Gau, & Shaw, 2009).

Wade (2009) explored three approaches to decreasing body dissatisfaction: acceptance, cognitive dissonance, and distraction. These approaches were all found to be superior to control conditions in increasing weight and appearance satisfaction. An efficacy trial was conducted where adolescent females were randomly assigned to a dissonance intervention condition, healthy weight management intervention condition, an expressive writing condition, or an assessment-only condition. Results showed that females in the dissonance group experienced greater reductions in eating disorder risk factors than all other groups (Stice, Shaw, Burton, & Wade, 2006). A further effectiveness trial testing the same intervention procedure randomized adolescent females to a dissonance intervention or a psychoeducational brochure control condition. Key to this research was the use of school staff and faculty as facilitators who were given only 4 hr of training in an attempt to emulate real-life circumstances. Results indicated that participants in the dissonance intervention showed significantly greater decreases in body dissatisfaction than those in the psychoeducational brochure condition. Further, these changes were still evident upon 1-year follow-up.

The possible applications of self-affirmation theory as related to threats to body image, as well as possible intervention strategies are in their infancy. Nonetheless, the research presented here displays evidence of an interesting relationship between the constructs that requires further exploration. A greater understanding of the influence of self-affirming when an individual is exposed to a threat to body image may result in implications for both preventative and intervention strategies. Although understanding the interaction between self-affirmation and

specific threats is integral to the applied use of the theory, it is essential that researchers also continue to assess individual differences that may influence the theory's usefulness; for example, differences in self-esteem.

The Present Study

While the research literature on self-affirmation theory is quite extensive and spans a number of areas of study, the full value of the theory in practice has not yet been ascertained. The current study was intended to further investigate several gaps and contradictions evident in the research literature. The primary purpose of the study was to replicate findings consistent with previous self-affirmation literature, such that individuals receiving a threat to self-integrity would divest their stake in the relevant domain due to defensive cognitions, and increase their invested stake in another domain of self-worth and, through this self-affirmation, maintain or restore self-integrity. Though this relationship has been observed in a multitude of research scenarios, it is essential to replicate these findings under alternative conditions and examining different aspects of self-worth. In particular, the present study intended to further understanding of the relationship between self-affirmation and self-esteem. Previous research has shown inconsistent attitude or behavioural change reflective of differences in levels of self-esteem, thus necessitating further research in this area. The current study sought to identify relationships between appearance and academic self-esteem and self-affirmation and investigate possible mitigating influences of the observed relationship.

The study methodology was also designed to explore a number of secondary purposes, understanding of which the research literature is currently lacking. There is presently lacking an explicit understanding of the natural process of self-affirmation. Thus far, research has primarily focused on using methodology that initiates or encourages the self-affirmation process, and

subsequently measures behaviour or attitude change to determine that self-affirmation has occurred (see McQueen & Klein, 2006 for a review of experimental manipulations); in this sense, participants are largely forced to engage in self-affirmation. Exploring self-affirmation processes using this approach has limited understanding of possible natural occurrences of self-affirmation processes. Further, the self-affirmation manipulations implemented in many studies utilize methods that make the process difficult to generalize to real-life circumstances; for example, having participants write essays outlining their perspective on a particular aspect of the self.

The current study utilized a role play procedure that required the participant to act as they would in an ecologically valid interpersonal situation. That is, the role play was designed to allow for inference to real-world conditions (Field, 2009). As such, the study did not implement a traditional self-affirmation manipulation, for example, having participants write an essay about an important value. This omission was intended to allow for an understanding of whether self-affirmation is a universal process, whether some individuals do or do not self-affirm and specific characteristics of particular groups. Instead, evidence of self-affirmation was directly observable through rating scales where self-affirmation can be reported as opposed to relying on outcome differences between self-affirmed or nonaffirmed groups to provide purported evidence of self-affirmation.

This study also sought to further explore the possible utility of self-affirmation in the intervention of body image problems. The preliminary research discussed previously (Berstrom et al., 2009; Jarry et al., 2007) suggests that self-affirmation may have the potential to improve self-esteem in regard to body image. As such, the present study intended to further explore whether the tendency to self-affirm may differ based on appearance self-esteem. Further, the

study sought to investigate the relationship between appearance self-esteem and self-affirmation following exposure to a body image threat inherent during the review of the role play. Previous research has found that women who viewed their own bodies via video exposure experienced greater negative emotions presumably as a result of associated body image cognitions (Tuschen-Caffier, Vögele, Bracht, & Hilbert, 2002). Thus, participants simply viewing their role play would serve as a direct threat to body image that may present differing outcomes based on level of appearance self-esteem.

Lastly, this study was designed to further explore the relationship between same- and different-domain affirmations. Specifically, the study explored naturally occurring same- or different-domain affirmations, and examined subsequent differences in self-esteem and positive affect. As indicated by the previously discussed literature, if individuals engage in a same-domain affirmation, this should lead to decreases in appearance self-esteem and positive affect. Individuals who engage in different-domain affirmations should display increases in appearance self-esteem and positive affect.

Hypotheses

In sum, the proposed study is primarily intended to replicate previous findings in support of the process of self-affirmation theory as well as to further understand the relationship between self-affirming processes and self-esteem. The primary hypotheses directly address goals of the study to replicate findings consistent with previous self-affirmation literature and examine the relationship between self-affirmation and self-esteem. The remainder of the goals of the study are implicit in the hypotheses, and in the design of the study itself. Given the inconsistent findings related to the secondary goals in the research literature, concrete hypotheses are not

presented. The primary hypotheses for the current study are as follows and are illustrated in
Figure 1:

1. The domain targeted as a topic of discussion in an interpersonal encounter will pose a
threat to those individuals who experience low self-esteem in the specified domain. In an
attempt to maintain self-integrity, such individuals will subsequently engage in defensive
processing by divesting their stake in this domain specific contingency of self-worth.

2. Individuals with low self-esteem who experience a threat in the specified domain will
invest their stake in other domains of self-worth. For instance, discussion of appearance
concerns during an interpersonal encounter will cause vulnerable individuals, predisposed to low
appearance self-esteem, to subsequently overvalue nonappearance domains such as academic
self-worth.
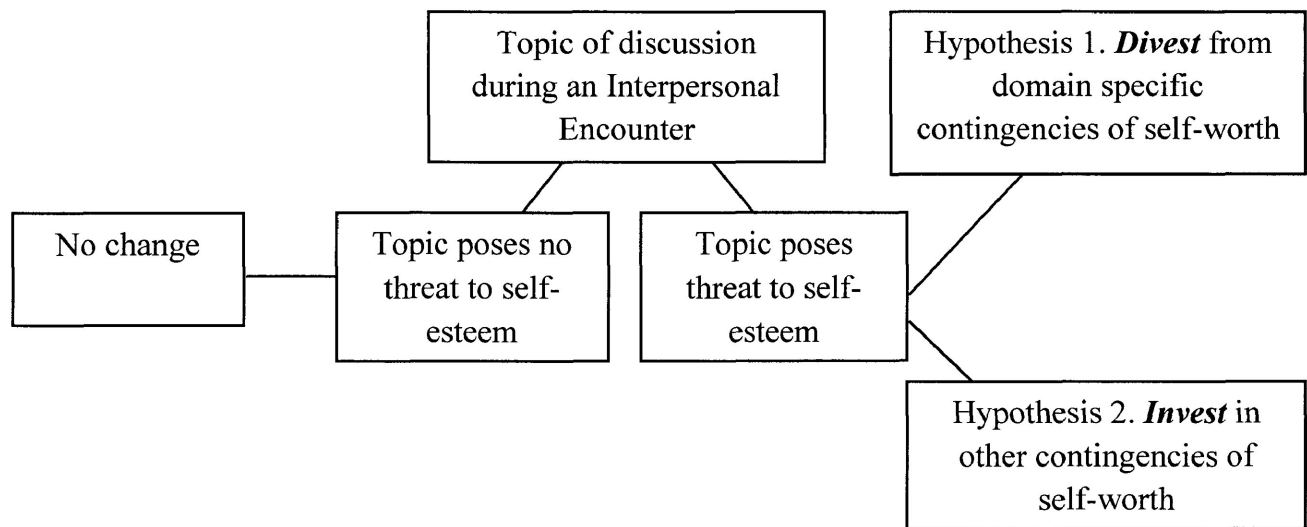
Figure 1. Diagram illustrating hypotheses one and two.

Method

Experimental Design

The study implemented a moderated multiple regression model (MMR) to examine
predicted relationships between discussion type, self-esteem and change in Contingent Self-

Worth Scale (CSWS) scores. The primary independent variables explored in this study were self-esteem (appearance, academic) and discussion type (appearance, academic). The primary dependent variable explored was change in CSWS scores (appearance/academic, nonappearance composite/nonacademic composite) from prerole play (preRP) to postrole play (postRP) and role play review.

Participants

One hundred and three female students were recruited through course email (see Appendix A) from undergraduate Psychology courses and advertisements (see Appendix B) posted at Lakehead University. The recommended participant size required for analyses, based on an alpha level of .05 and a small effect size ($d = .2$), was a minimum total sample size of about 100 participants as determined by the statistical software G*Power 3 (Faul, Erdfelder, Lang & Buchner, 2007). Only female students were recruited due to reported sex differences in perceptions of body image (Davison & McCabe, 2005). Participants taking eligible psychology courses earned 1.5 bonus marks toward their course credit for completion of both an online questionnaire and an in-lab component. Participants outside of eligible psychology courses earned $20 for completing the study. At the outset of the online questionnaire, participants were provided with information and consent forms (see Appendix C & D).

Materials

Primary dependent measures. The primary dependent measures in the current study assessed changes in investment of contingent self-esteem domain in addition to aspects of state self-esteem.

Contingencies of Self-Worth Scale. (CSWS; Crocker, Luhtanen, Cooper, & Bouvrette, 2003; Appendix E). The CSWS was used as a dependent variable assessing any change in stake

in domains of self-worth that was evidenced by participants. Further, it provided a measure of whether self-affirmation had occurred. There is currently not a measure designed to assess the domains in which self-affirmations occur. The Dimensions of Self-Worth Questionnaire (DSWQ) was created for this reason by Bergstrom et al. (2009) and was based upon the items used in the CSWS. However, as the psychometric properties of this scale have not been thoroughly tested, using the original CSWS was considered most appropriate for the purposes of this study. The scale consists of 35 items that are rated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale measures seven dimensions of self-esteem: academics, appearance, approval from others, competition, family support, God's love, and virtue. Sample items include "When I think I look attractive, I feel good about myself" and "Doing something I know is wrong makes me lose my self-respect". Test-retest reliabilities range from .62 (Academic Competence) to .92 (God's Love) and Cronbach's alphas ranged from .82 to .96 (Crocker et al., 2003).

CSWS composite scales. In order to test hypothesis two, composite scales were constructed to analyze the degree to which participants invested their stake in other domains of self-worth. Composite scales were created for nonappearance and nonacademic domains of self-worth by taking the weighted average of the six nonrelevant subscale scores.

State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991; Appendix F). The SSES was used to provide a measure of an individual's level of self-esteem at the time the first questionnaire was completed and again after the role play videotape had been reviewed. The questionnaire consists of 20 items which are scored on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). Items reflect three areas of self-esteem including Performance, Social Evaluation, and Appearance. Sample items from these domains include "I feel frustrated or

rattled about my performance", "I feel self-conscious" and "I feel unattractive", respectively. Internal consistency for the entire scale is reportedly high at .92 (Heatherton et al., 1991).

The SSES: Appearance subscale was used in its entirety. The SSES: Performance subscale includes items that do not directly relate to academic performance. For the purposes of this study, a two-item composite score was used; specifically, items 9 "I feel as smart as others" and item 18 "I feel that I have less scholastic ability right now than others" (reverse-scored). For purposes of the present study, this newly derived subscale is called SSES: Academic and derived by summing the two items.

Secondary dependent measures. The secondary dependent measures in this study were used to explore group differences among individuals who invested differently in domains of self-worth.

Demographics (Appendix G). Participants were asked to provide basic demographic information including their current age, relationship status, ethnicity, weight and height.

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965, 1979; Appendix H). The RSES was used as a measure of global self-esteem. It consists of 10-items that are reported on a 4-point likert-type scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Sample items include "I take a positive attitude toward myself" and "At times I think I am no good at all". The internal consistency of the RSES is high with Cronbach's alpha of 0.92 (Rosenberg, 1979).

Post-study questionnaire (Appendix I). At the end of the final questionnaire, participants were asked questions pertaining specifically to the role play. First, participants were asked to rate their affective experience on nine items describing how they retrospectively felt while viewing their role play video. Items on this scale were used in exploratory analyses to develop factors that reflected positive and negative affect during the role play. Items were rated on a 7-

point Likert scale ranging from 1 (*strongly disagree)* to 7 (*strongly agree*). Sample items include finding the task of viewing the video to be "difficult" and "inspiring". Participants were also asked four questions that addressed understanding of the role play topic. Responses were provided on the same scale as above. Sample items include "I understand my "client's" problem and "I too have a similar problem as my client".

Procedure

An email (see Appendix A) was sent to all eligible female undergraduate students, directing them to the online questionnaire website. Additionally, advertisements detailing the study were posted in student areas across campus (see Appendix B). Potential participants were first directed the participant information and consent forms (see Appendix C & D) where they were required to click a consent box in order to indicate agreement with the conditions of the study and continue the questionnaire. Students in eligible psychology courses were also informed that they would earn half a bonus mark for their participation in the online questionnaire; students not in eligible courses would receive $20 for their participation. Participants then completed a demographic questionnaire followed by the SSES, CSWS and RSES (Appendices F-H). Participants took approximately 30 min to complete the questionnaire package. At the conclusion of the questionnaires, participants were given the opportunity to sign-up for a laboratory session online which was to take place within the Department of Psychology. The session took approximately 1 hr to complete for which the participant received an additional bonus mark. On average, participants completed the lab session seven days following completion of the online questionnaire.

Participants arrived at the laboratory where they were greeted by one of two female experimenters. Participants were randomly assigned to the experimental conditions prior to their

arrival by drawing suits from a deck of cards, each suit designating a particular condition. As this study was part of a larger study, participants were also fitted with a chest strap for heart rate monitoring and donated a sample of saliva. Participants were then told that they were going to be videotaped while role playing the part of a therapist for a 5-min interview. During the role play the participant would be interviewing a mock client (the experimenter) who would present with either a body image or academic problem (see Appendix J for instructions and Appendix K for role play scripts). Participants were instructed to begin the interview with the question "What brings you in here today..." providing an opportunity for the researcher to standardize the discussion and direct the topic as designated in the script. Given that the participant's dialogue was not scripted, the experimenter was responsible for ensuring that the flow and content of the interview remained consistent.

The role play component of the study was designed to mimic as closely as possible real life interpersonal encounters. In turn, this experience was anticipated to activate schemas or domains of importance for the participant, serving to address the fourth tenet of self-affirmation theory as discussed above. Similar role play encounters have been shown to elicit arousal when assessed by self-report and psychophysiological functioning (Foley & Kirschbaum, 2010; Taylor et al., 2010). Body image and academic issues were chosen for role play topics because of their relevance for female university students. Further, previous research has shown that experimental manipulations that prime specific domains of self-worth, such as relationships, have resulted in subsequent self-affirmations (Horberg & Chen, 2010). Thus, priming of appearance and academic domains of self-worth should also be effective in producing self-affirming behaviours.

Participants were informed that their videotaped interview would be rated at a later time by research assistants to assess of the quality of potential therapy skills. As participants were not

prepared for the role play ahead of time and were informed that their interview would be rated by experts, this procedure again mimicked the Trier Social Stress Test (Kirschbaum, Pirke, & Hellhammer, 1993). The participant was fitted with a microphone and videotaped in a seated position with the camera set up so that the whole body was centered in the frame of the camera. The role play protagonist (one of two female experimenters) conducted the role play seated approximately 4 ft apart from the participant, the latter off camera.

Following the role play, the experimenter connected the video camera to a 72-in high definition television so that the participant could view their role play. The role play was viewed for the purpose of reactivating and emphasizing the participant's schema of the issue discussed in the role play. Further, viewing the video served as a threat to the participant's body image by exposing them to their own bodies for the duration of the video playback.

Following the review of the video, the participant was presented with another package of questionnaires including postRP measures of the SSES, CSWS and the post study follow-up questionnaire (see Appendix I). Upon completion of the questionnaires, participants were given a debriefing form (see Appendix L) and an opportunity to ask the researcher questions about their participation.

Results

Analytic Strategy

The main analytical tool was moderated multiple regression (MMR) which allows researchers to test whether a moderating effect is present in a given population based on a data sample (Aguinis, 2004). MMR is based on an ordinary least-squares (OLS) regression equation that tests a model predicting the dependent variable Y from a predictor X and a second, putative moderator predictor Z. The equation illustrating this relationship is as follows:

$$Y = a + b_1 X + b_2 Z + e$$

where a is the least-squares estimate of the intercept, b_1 is the least-squares estimate of the

population regression coefficient for X, b_2 is the least-squares estimate of the population

regression coefficient for Z, and e is a residual term. It is important to note that the regression

coefficient b_1 represents the predicted increase in units of Y that would result from a 1-unit

increase in X, given that Z is held constant (Aguinis, 2004).

In the MMR model, a new variable is created by forming a product between the predictor

variables (X $\cdot$ Z) and is included as a third term in the regression. The equation illustrating this

model is as follows:

$$Y = a + b_1X + b_2Z + b_3X \cdot Z + e$$

where b_3 is the least-squares estimate of the population regression coefficient for the product

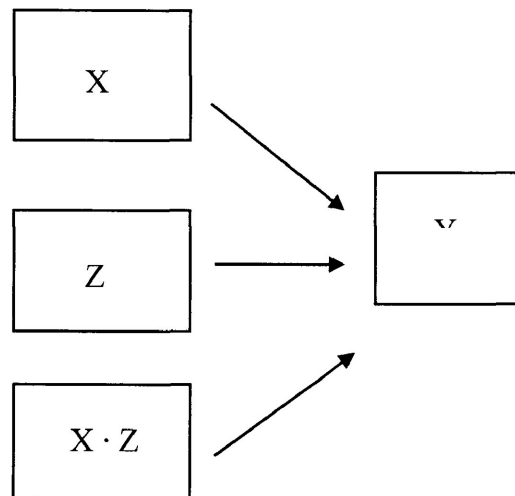term (Aguinis, 2004). This relationship is presented in Figure 2.

Figure 2. Graphic representation showing the model including the first-order effects for predicting Y from X and Z, and the product term X $\cdot$ Z. [1]

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[1] From *Regression Analysis for Categorical Moderators*, by H. Aguinis, 2004, New York: The Guilford Press. ©2004 The Guilford Press. Adapted with permission.

MMR produces computations that test the null hypothesis that $\beta = 0$. Further, the null hypothesis for the interaction term tests whether the "change in the slope of the regression of Y on X that results from a unit change in variable Z is greater than expected by chance alone" (Aguinis, 2004, p. 14). MMR also allow for computation of ΔR^2, referring to the proportion of variance in the Y criterion variable that is explained by the model. Further, follow up simple slope analyses may be conducted to assess whether slopes significantly differ across experimental groups dichotomously coded on Z (Aguinis, 2004).

The current study implemented a MMR model in order to examine the prediction of change in CSWS scores (Y) from self-esteem (X) and role play scenario (Z). The primary independent variables X explored in this study were two manifestations of self-esteem (appearance, academic) while the binary moderator Z variable involved the two different discussion topics of appearance and academics in the role play. The primary dependent variables explored were change in the following CSWS variables; ΔCSWS: Appearance, ΔCSWS: Academic, ΔCSWS: Nonappearance composite and ΔCSWS: Nonacademic composite where ΔCSWS = postRP minus preRP values.

MMR assumptions and best practices. The MMR model described above makes the following assumptions about the population data that are necessary to examine within the given sample. A description of the assumptions and an account of the tenability of the assumptions in the current study are presented below.

1. Homogeneity of error variance refers to a critical assumption which stipulates an equality of variance in Y among the moderator-based subgroups after predicting Y from X. If heterogeneity exists, researchers are more likely to commit a Type I or Type II statistical error (Aguinis, 2004). This assumption is fundamentally similar to the homoscedasticity assumption

of OLS regression models; however, homogeneity of error variance applies specifically to the distribution of residual across moderator-based groups (Aguinis, 2004). The program ALTMMR was developed by Aguinis, Peterson, and Pierce (1999) to examine homogeneity of error variance and this browser applet version was used in the current study to examine variables. The program produces Bartlett's M which assess whether the null hypothesis of homogeneity of error variance should be rejected (Aguinis, 2004). All variables entered into ALTMRR indicated homogeneous error variance according to the M statistic. The program also provides DeShon and Alexander's 1.5 heuristic which is based on a the results of a simulation study that found that the when the error variance in one subgroup is approximately 1.5 times larger than the error variance in another subgroup, the F statistic in MMR begins to be negatively affected (Aguinis, 2004). Only one analysis entered into ALTMRR violated this rule of thumb, and suggested measures are provided with the results to ensure the observed relationship was accurate.

2. MMR models require that residuals also exhibit homoscedasticity which refers to consistent variance of residuals across values of the predictor (Aguinus, 2004). Homoscedasticity is assessed by examining scatterplots of the residual scores with the standardized predicted value of the residuals on the x axis and the regression standardized residuals on the y axis. The plots are checked for evenly dispersed data points around zero (Field, 2009). None of the analyses in the current study violated this assumption.

3. MMR models require that residuals are independent which can be tested using the Durbin-Watson test which checks for serial correlations between errors (Field, 2009). The test statistic can vary from 0 to 4, with values less than 1 or greater than 3 providing reason for concern. Examination of the Durbin-Watson values for the models obtained in the current study indicated no values that fell outside the accepted range.

4. MMR assumes that there is less than complete multicollinearity, defined as a perfect linear relationship between two or more predictors. Multicollinearity can be tested using the tolerance statistic that may be requested with regression output in SPSS. Values below 0.1 indicate serious problems with multicollinearity (Field, 2009). Examination of tolerance statistics for the models obtained in the current study did not provide concern of multicollinearity in the dataset.

5. MMR assumes that errors are normally distributed, violations of which may be examined through visual examination of the histograms and normal P-P plots provided by SPSS output. Visual inspection of these plots for the models obtained in the current study did not indicate violation of this assumption; that is, residuals closely adhered to normal distributions.

6. MMR assumptions do not explicitly state that residuals should be examined for extreme outliers; however, prudent examination of outliers may be helpful in assessing the accuracy of the resulting model predictions. In this study, casewise SPSS diagnostics for the regression models were examined. Only one regression model exhibited one outlier defined as $z > 3$; however, when the outlier was removed, there was no appreciable change in model prediction and so the outlier was retained in the dataset.

7. Finally, researchers using MMR have strongly suggested the use of standardized (i.e., centered with $M = 0$ and $SD = 1$) predictor variables in the regression analysis before the interaction terms are calculated (Dawson, 2006). Standardized scores do not change the statistical significance of the model. Furthermore, standardization improves the ease of interpretation of the intercept as well as the coefficients for the first-order main effects (Aguinis, 2010). For this reason, all continuous predictor X variables in the current study's analyses were standardized.

Participants

One hundred and three participants completed the online questionnaire and laboratory sessions. Due to technical difficulties related to video recording and playback, five participants were deleted, leaving 98 participants retained in the final analyses. The mean age of participants was 21.79 years (SD = 5.52). Regarding ethnicity, the majority of participants were Caucasian (85%) followed by First Nations (7%), South Asian (2%), African-Canadian (2%), East Asian (1%), Hispanic (1%), and Other (1%). A minority of participants were married or common law (9%), divorced or separated (4%) or widowed (1%), while the majority reported they were single (84%). Most of the participants were enrolled full-time in academic studies (92%), with the remainder enrolled in part-time studies (6%) and no studies (2%).

Data Preparation

For the online questionnaires that were completed preRP, data screening revealed 23 missing data points, accounting for less than 1% of the total data points. Data was missing for one item for seven individuals, two items for one individual, and three items for one individual for the CSWS; and six individuals were missing one item while two individuals were missing two items on the SSES.

For questionnaires completed in the lab immediately postRP, data screening revealed 25 missing data points, accounting for less than 1% of the total data points. Fourteen individuals missed one item and one individual missed two items of the CSWS; and seven individuals missed one item and one individual missed two items of the SSES. Missing data at both assessment occasions was replaced with prorated scores within individuals for the items on the scale or subscales under consideration.

Data was also examined for outliers wherein the standardized value of a raw score was defined as $z > 3$. At preRP, the analysis revealed two outliers for CSWS: Academic; one outlier on each of the CSWS: Appearance, CSWS: Nonappearance Composite and CSWS: Nonacademic Composite. At postRP, the analysis revealed one outlier on each of the CSWS: Academic, CSWS: Nonacademic Composite, CSWS: Nonappearance Composite and the SSES: Performance. These outliers were replaced with the next highest score not meeting outlier criteria (Field, 2009).

Psychometric Variables

Descriptive information and indices of internal consistency for the variables of interest at preRP and postRP are presented in Tables 1 and 2. Six of the psychometric variables listed in the tables had data distributions that were significantly skewed where $z_{skewness}$ (Skewness – 0/$SE_{skewness}$) exceeded the convention of 1.96 consistent with two-tailed $p < .05$. Four of these variables were negatively skewed: preRP CSWS: Appearance, preRP SSES: Total, preRP SSES: Social, and postRP CSWS: Appearance. Following a mathematical reflection of the four negatively skewed distributions, all four variables were subjected to the natural log transformation which produced $z_{skewness} < 1.96$ for five variables. The transformed variables were used in all subsequent analyses.

Hypothesis One

To test the hypothesis that participants who are low in domain specific self-esteem would *divest* their stake in their *domain specific* contingencies of self-worth, a MMR model was employed in which variables were entered hierarchically as follows: SSES: Appearance at preRP and scenario were simultaneously regressed at step one on to ΔCSWS: Appearance followed by the interaction term SSES: Appearance × Scenario at step two. At step one, the model was not

Table 1

Prerole Play Reliability Coefficients and Descriptive Statistics of the Psychometric Variables.

Variables	M	SD	α	No. of items	Range Potential	Actual	$z_{Skewness}$
CSWS: Appearance	5.11	.92	.68	5	1-7	2.60-7	-1.98*
CSWS: Academic	5.53	.69	.74		1-7	3.8-7	0.47
CSWS: Nonappearance Composite	4.56	.69	.91	30	1-7	2.70-6.53	-0.18
CSWS: Nonacademic Composite	4.49	.70	.88	30	1-7	2.50-6.43	-0.29
SSES:							
Total	70.80	12.58	.90	20	20-100	33-96	-2.06*
Appearance	19.11	4.54	.83	´	6-30	7-29	-1.29
Performance	26.34	4.38	.83		7-35	17-35	-0.45
Social	25.41	5.66	.87		7-35	9-35	-3.53*
Academic	7.28	1.72	.66		2-14	2-10	-1.44
RSES	29.75	5.06	.89	10	10-40	15-30	-.80

Note. N = 98. CSWS=Contingent Self-Esteem Scale; SSES= State Self-Esteem Scale; RSES = Rosenberg Self-Esteem Scale.
*p < .05.

statistically significant, F (2, 95) = .86, p = .426. However, results revealed a significant

interaction at step two, F (1, 94) = 11.45, p = .001, which is depicted in Figure 3. Beta

(β)coefficients and ΔR^2 values can be found in Table 3 for all regression analyses. Simple slope

tests showed that the negative association of SSES: Appearance at preRP and ΔCSWS:

Appearance was significant for participants in the appearance scenario, β = -.4, t = -2.98, p =

.005 but not in the academic scenario, β = .24, t = 1.71, p = .10.

Table 2

Postrole Play Reliability Coefficients and Descriptive Statistics of the Psychometric Variables

Variables	M	SD	α	Actual range	$r_{\text{test-retest}}$	z_{Skewness}
CSWS: Appearance	5.03	1.07	.81	1.60-7	.71	-2.82*
CSWS: Academic	5.58	.71	.80	3.8-7	.67	-.42
CSWS: Nonappearance Composite	4.54	.76	.89	2.13-6.2	.88	0.18
CSWS: Nonacademic Composite	4.47	7?	.91	2.87-6.17	.86	-.035
SSES:						
Total	70.35	13.31	.93	35-100	.81	0.89
Appearance	18.79	5.18	.88	7-30	.82	-1.37
Performance	26.04	4.46	.82	13-35	.59	-0.68
Social	25.52	5.72	.89	10-35	.78	-1.12
Academic	7.17	1.72	.74	2-10	.64	-1.27

Note. N = 98. CSWS=Contingent Self-Esteem Scale; SSES= State Self-Esteem Scale.
*p < .05.

The same regression model was analyzed using SSES: Appearance at postRP as the predictor variable. At step one, the model was not significant, F (2, 95) = 1.30, p = .278. At step two, the interaction was significant, F (1, 94) = 6.07, p = .016, the results of which are displayed in Figure 4. Simple slope tests again showed that the negative association of SSES: Appearance and ΔCSWS: Appearance was significant for participants in the appearance scenario, β =-.37, t = -2.68, p = .01, but not for participants in the academic scenario, β =-.11, t = .76, p = .45. Results thus far fail to support the hypothesis that low-esteem participants would divest their stake in domain specific contingencies of self-worth. In fact the opposite was observed in the
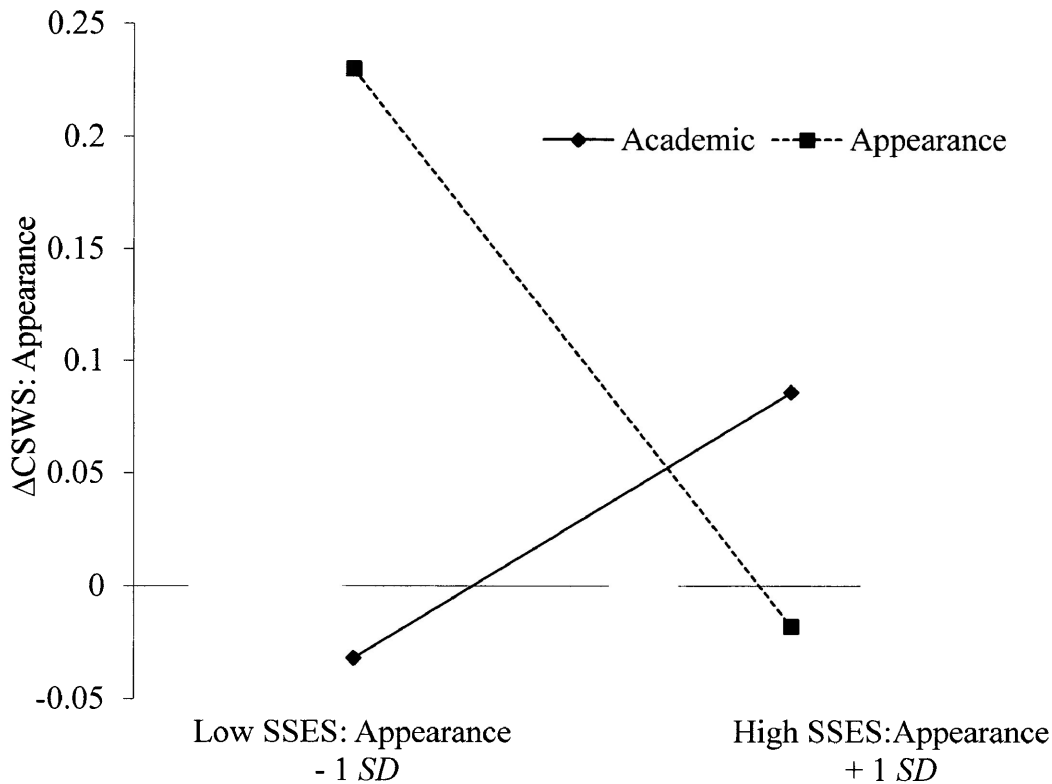
Figure 3. Interaction of Prerole play SSES: Appearance and role play scenario on ΔCSWS: Appearance.

case of participants involved in the appearance but not academic role play scenario whereby the former increased their stake.

The above analyses test the veracity of hypothesis one specifically with regard to the self-esteem domain concerning one's appearance. A more complete test of the hypothesis requires an evaluation as to whether the same holds for other domains of self-esteem. Thus, preRP SSES: Academic and scenario were regressed on to ΔCSWS: Academic, again followed by the interaction term SSES: Academic × Scenario. The model failed to produce either significant main effects at step one, $F(2, 95) = 1.52, p = .224$, or interaction at step two, $F(1, 94) = .64, p = .426$. Running the same analysis using postRP SSES: Academic produced both nonsignificant main effects, $F(2, 95) = 2.36, p = .10$, and interaction term, $F(1, 94) = .01, p = .939$. Thus, the results of both appearance and academic self-esteem analyses did not support hypothesis one as

Table 3

Hierarchical Moderated Multiple Regression Analyses Testing Hypothesis One

	SSES at:			
	Prerole play		Postrole play	
	ΔR^2	β	ΔR^2	β
	Prediction of ΔCSWS: Appearance			
Step 1	.02		.03	
SSES: Appearance		-.03		-.10
Scenario		1?		.15
Step 2	.10**		.06*	
SSES: Appearance × Scenario		-.41**		-.32*
Total R^2	.12**		.09*	
	Prediction of ΔCSWS: Academic			
Step 1	.03		.05	
SSES: Academic		-.14		-.19
Scenario		.10		.09
Step 2	.01		.00	
SSES: Academic × Scenario		.10		.01
Total R^2	.04		.05	

Note. Standardized beta coefficients are reported. $n = 98$
*$p < .05$. **$p < .01$.
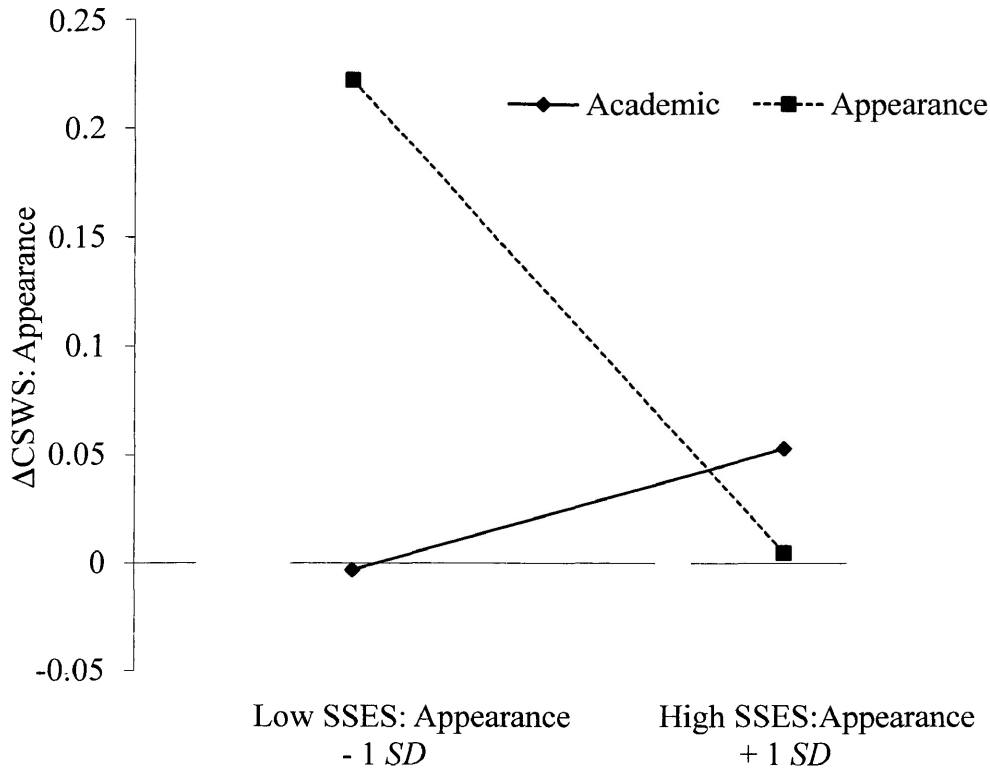
Figure 4. Interaction of Postrole play SSES: Appearance and role play scenario on ΔCSWS: Appearance.

neither group exhibited a significant decrease in invested stake in the relevant domain.

Hypothesis Two

To test the hypothesis that participants who are low in domain specific self-esteem would *invest* their stake in their *domain nonspecific* contingencies of self-worth, a MMR model was employed in which variables were entered hierarchically as follows: SSES: Appearance at preRP and scenario were simultaneously regressed at step one on to ΔCSWS: Nonappearance Composite followed by the interaction term SSES: Appearance × Scenario at step two (see Table 4). At step one, the model was statistically significant, $F(2, 95) = 4.23, p = .017$. This was accounted for by a significant scenario main effect, $\beta = .29, t = 2.88, p = .005$, whereas SSES:

Appearance main effect was nonsignificant, $\beta = -.08$, $t = -0.79$, p = .435. Furthermore, the SSES: Appearance x Scenario interaction was not significant, $F(1, 94) = 0.16$, $p = .694$.

A more penetrating analysis of the significant scenario main effect using ANOVA revealed that participants in the appearance scenario had greater positive scores on ΔCSWS: Nonappearance Composite than their academic scenario counterparts, $Ms = 0.08$ ($SD = 0.34$) and -0.12 ($SD = 0.34$), respectively, $F(1, 96) = 7.88$, $p = .006$. These results suggest that only those participants in the appearance scenario subsequently invested greater stake in domain nonspecific contingencies of self-worth relative to their academic scenario counterparts. This provides partial support for hypothesis two. Table 4 displays the results for the remaining three MMR tests of hypothesis two that were conducted. The pattern of results in each case was the same; a significant scenario main effect whereby appearance scenario participants reported greater positive change in CSWS Composite scales, and nonsignificant SSES x Scenario interaction.

Exploratory Analyses

Exploratory analyses were conducted in an attempt to further understand the observation that participants with low appearance esteem increased their stake in both domain specific and nonspecific contingencies of self-worth of the CSWS following their role play.

Identification. It is possible that those participants with low SSES: Appearance increased their stake in CSWS: Appearance following a discussion related to appearance because they were selectively prone to identify with the protagonist's body image plight in the role play. Participants were asked to complete at postRP four questions that related to the degree they identified with their "client" (See Appendix J). These questions were subjected to a factor analysis which identified two questions that best fit an identification variable called

Table 4

Hierarchical Moderated Multiple Regression Analyses Testing Hypothesis Two

	SSES at:			
	Prerole play		Postrole play	
	ΔR^2	β	ΔR^2	β
Prediction of ΔCSWS: Nonappearance Composite				
Step 1	.08*		.10**	
SSES: Appearance		-.08		-.16
Scenario		.29**		.31**
Step 2	.00		.00	
SSES: Appearance × Scenario		-.05		.03
Total R^2	.08		.10	
Prediction of ΔCSWS: Nonacademic Composite				
Step 1	.08		.09*	
SSES: Academic		.04		-.13
Scenario		.28**		.27**
Step 2	.01		.00	
SSES: Academic × Scenario				-.04
Total R^2	.08		.09	

Note. Standardized beta coefficients are reported. $n = 98$
*$p < .05.$ ** $p < .01.$

Identification factor: "I personally related to my client's problem" and "I too have a similar problem as my client", $r = .78$. Participant's scores on these two items were subsequently averaged where higher scores reflect greater identification with the protagonist problem. To test the possible role of identification, a MMR model was employed in which variables were entered hierarchically as follows: SSES: Appearance at preRP and scenario were simultaneously regressed at step one on to the identification factor followed by the interaction term SSES: Appearance × Scenario.

Variables were first analyzed to ensure that they conformed to the MMR assumptions as previously outlined. Regarding the relationship between SSES: Appearance and Identification at postRP, this investigation revealed that the homogeneity of variance assumption was not confirmed. Thus, according to recommendations by Aguinis (2004), James's J statistic and Alexander's A statistic should be examined for verification of the moderated relationship. Both statistics are computed by ALTMMR. Casewise diagnostics also indicated one outlier at both preRP and postRP, however removing the outlier from the analyses did not appreciably change the results, and so the case was retained in the final analysis. All other assumptions of MMR were met.

Results of the MMR indicated a SSES: Appearance × Scenario interaction at preRP, F (1, 94) = 3.93, $p = .05$ which is graphically represented in Figure 5. Beta (β)coefficients and ΔR^2 values can be found in Table 5 for the regression analyses. Simple slopes analyses indicated that the association of SSES: Appearance and Identification was significant for participants in the appearance scenario, $\beta = -.53$, $t = -4.23$, $p < .001$, but not for participants in the academic scenario, $\beta = -.24$, $t = -1.69$, $p = .098$. These results suggest that individuals with low SSES: Appearance identified more with the appearance discussion topic than individuals with high

SSES: Appearance, and that this relationship was selective in as much as it was not evident for

participants in the academic role play.
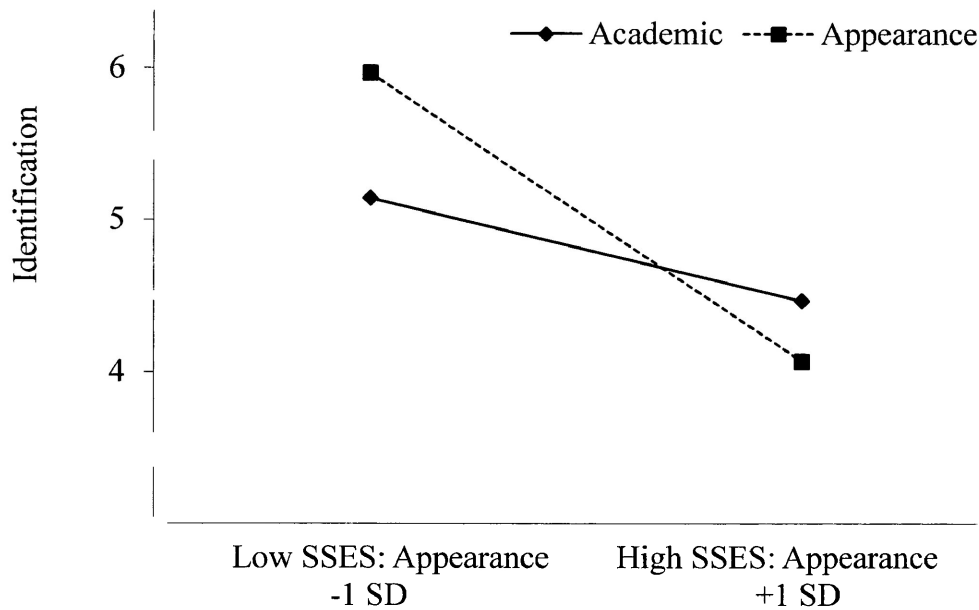
Figure 5. Interaction of Prerole play SSES: Appearance and role play scenario on identification.

The same MMR as above was rerun using SSES: Appearance at postRP as the

independent variable. Again, results indicated a SSES: Appearance × Scenario interaction, F (1,

94) = 10.02, p = .002 which is graphically represented in Figure 6. James' J statistic (10.85, U_{crit}

= 3.94, p < .05) and Alexander's A (A = 10.05, p = .0015) statistic indicated differential slopes

suggesting that, in spite of the homogeneity of error variance violation, the obtained significant

moderated interaction effect was accurate. Simple slopes analyses revealed that the association

of SSES: Appearance and Identification was significant for participants in the appearance

scenario, β = -.68, t = -6.30, p < .001, but not for participants in the academic scenario, β =

.17, t = -1.16, p = .253. These results suggest that individuals with low SSES: Appearance

Table 5

Hierarchical Moderated Multiple Regression Analyses Predicting Identification

	SSES at:			
	Prerole play		Postrole play	
	ΔR^2	β	ΔR^2	β
	Prediction of identification			
Step 1	.13**		.15***	
SSES: Appearance		-.36***		-.40***
Scenario		.06		⁺ ⁺
Step 2	.04		.08**	
SSES: Appearance × Scenario		-.24*		-.38**
Total R^2	.16		.23**	

Note. Standardized beta coefficients are reported. $n = 98$
*$p = .05$. **$p < .01$. ***$p < .001$.

identified more with the appearance discussion topic than individuals with high SSES: Appearance. Furthermore, this relationship was selective in that it was not evident among participants who took part in the academic role play scenario.

Positive and negative affect. The results thus far indicate that participants with low SSES: Appearance identified more with the protagonist in their role play scenario and invested greater stake in the appearance domain of self-worth than did their counterparts with high SSES: Appearance. Hence, it appears that SSES: Appearance is an important determinant of the nature and extent of interpersonal influence upon participants. As such, the final exploratory analysis focused on (a) the role of SSES: Appearance on positive and negative affect experienced by
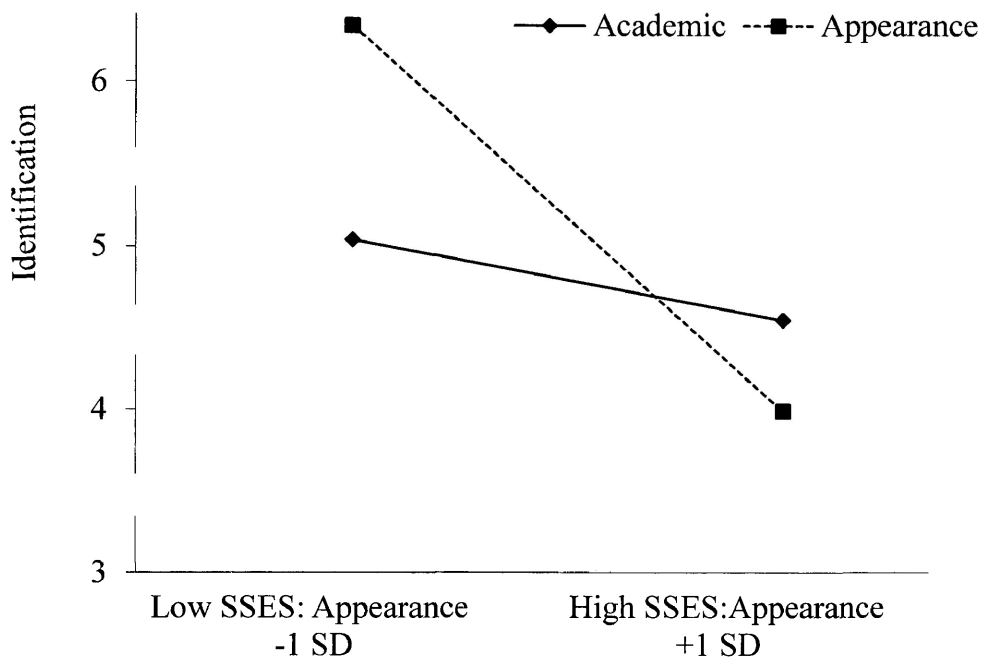
Figure 6. Interaction of Postrole play SSES: Appearance and role play scenario on identification.

participants and (b) whether this specific aspect of self-esteem is not better accounted for by

other facets of self-esteem. To this end, an investigation of the relationship of SSES:

Appearance to positive and negative affect was conducted with SSES: Academic and RSES

simultaneously entered into the MMR to determine which operational definition of self-esteem

was most predictive of affective response to the role play. While SSES: Academic is self-

evident in terms of the domain of self-esteem that it captures, RSES is not. The latter is a

measure of general self-worth.

Positive and negative affect was assessed in the postRP questionnaire by asking

participants to rate how they felt during the viewing of their role play video (See Appendix I).

The nine affect items from the questionnaire were entered into a principal component analysis

(PCA) with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure which was used to

verify the sampling adequacy of the analysis and was determined to be sufficient, KMO = .87; further, all KMO values for individual items were between .8 and .9 which is considered to be well above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity, χ^2 (36) = 514.62, $p < .001$, indicated that correlations between items were sufficiently large for the PCA.

An analysis was conducted to obtain eigenvalues for the factors in the data. Two factors emerged that were above Kaiser's criterion of an eigenvalue greater than 1 (Field, 2009) that explained 68% of the variance. As well, visual inspection of the scree plot indicated the presence of two factors. Table 6 displays the factor loadings after varimax rotation. Items that clustered on the two factors suggest that Factor 1 represents descriptors of negative affect while Factor 2 represents descriptors of positive affect. The identified Positive Affect (PA) factor and the Negative Affect (NA) factor both had good internal consistency with Chronbach's $\alpha = .91$ and .84, respectively.

A hierarchical MMR analysis was conducted to test the notion that (a) participants with low SSES: Appearance would show greater NA and less PA than participants with high SSES: Appearance and (b) that SSES: Appearance would be a better predictor of affect than either SSES: Academic or RSES. SSES: Appearance, SSES: Academic, RSES and scenario were regressed on to PA followed by the product terms of each self-esteem variable with role play scenario. The same steps were followed using NA as the dependent variable at preRP and postRP. As before, the analysis was run twice, once for SSES taken at preRP and again when taken at postRP.

At preRP the model was significant at step 1 for the PA and NA, $F (4, 93) = 5.71, p < .001$ and $F (4, 93) = 5.10, p = .001$, respectively. At postRP the model remained significant at step 1, $F (4, 93) = 9.63, p < .001$ and $F (4, 93) = 10.10, p < .001$. β coefficients and ΔR^2 values

Table 6

Factor Loadings for Exploratory Factor Analysis with Varimax Rotation of Positive and Negative Affect

	Rotated factor loadings	
Item number and descriptor	Negative Affect	Positive Affect
1. Difficult	**.66**	-.45
2. Enjoyable	-.56	**.70**
3. Stressful	**.83**	-.22
4. Pleasant	-.33	**.81**
5. Shameful	**.85**	-.15
6. Inspiring	-.11	**.89**
7. Depressing	**.72**	-.31
8. Positive	-.34	**.75**
9. Awkward	**.48**	-.42

can be found in Table 7 for the regression analyses. None of the regressions were significant at step 2, indicating that there were no interactions between any of the three self-esteem variables and role play scenario in the prediction of affect. SSES: Appearance was a significant predictor for the model in each analysis. Specifically, participants with low SSES: Appearance showed less PA and more NA than participants with high SSES: Appearance. Further, SSES: Academic was not a significant predictor of PA or NA, except for predicting the PA at preRP. Similarly, RSES was a nonsignificant predictor of affect in all analyses., Thus, it appears that SSES: Appearance is the central self-esteem construct specifically related to the affective response of participants to the role play and subsequent video review of such *regardless* of the type of plight the protagonist revealed in her role play; appearance or academic woes.

Table 7

Hierarchical Moderated Multiple Regression Analyses Predicting Positive and Negative Affect Factors

	SSES at:			
	Prerole play		Postrole play	
	ΔR^2	β	ΔR^2	β
	Prediction of Positive Affect factor			
Step 1	.20***		.29***	
Scenario		.20*		.13
RSES		.20		.16
SSES: Academic		-.13		-.24*
SSES: Appearance		.28*		.47***
Step 2	.01		.02	
RSES × Scenario		-.03		.01
SSES: Academic × Scenario		.04		.17
SSES: Appearance × Scenario		.08		.04
Total R^2	.21		.31	
	Prediction of Negative Affect factor			
Step 1	.18**		.27***	
Scenario		.01		.07
RSES		-.08		.01
SSES: Academic		-.04		-.14
SSES: Appearance		-.35**		-.49***
Step 2	.02		.02	
RSES × Scenario		-.08		-.22
SSES: Academic × Scenario		-.19		-.00
SSES: Appearance × Scenario		1.3		.18
Total R^2	.20		.32	

Note. Standardized beta coefficients are reported. $n = 98$
*$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

This study was intended to examine gaps and contradictions evident in the current self-affirmation literature. The current study sought to replicate previous findings indicating that individuals receiving a threat to self-integrity would divest their stake in the relevant domain due to defensive cognitions, and increase their stake in another domain of self-worth, in order to

maintain self-integrity. In contrast to most previous studies of self-affirmation, the current study investigated these findings within the context of an ecologically valid interpersonal scenario, in order to assess whether self-affirmation is a universal process. Further, it was designed to explore the relationship between self-affirmation and self-esteem which had produced inconsistent findings in previous research. The possibility that self-affirmation theory might produce insight into concerns with body image and subsequent interventions to improve body image was also examined. Lastly, the study intended to investigate any same- or different-domain affirmations that took place within participants. Subsequent exploratory analyses investigated significant findings regarding the relationship between SSES: Appearance, identification, and PA and NA experienced during the role play scenario.

The first intention of the study was to replicate findings consistent with previous self-affirmation literature, such that individuals receiving a threat to self-integrity would divest their stake in a relevant domain due to defensive cognitions and increase their invested stake in other nonrelevant domains of self-worth. Results pertaining to hypothesis one results contradicted the previous literature such that participants with low SSES: Appearance increased their stake in CSWS: Appearance following the appearance role play. Participants with high SSES: Appearance also did not significantly decrease their investment in the appearance domain of self-worth. The relationship between SSES: Appearance and ΔCSWS: Appearance was further explored, the results of which will be discussed later.

It is of note that there were differences observed in the relationship between SSES: Appearance and ΔCSWS: Appearance based on role play scenario. That is, participants in the academic scenario did not increase their stake in CSWS: Appearance as did their counterparts in the appearance scenario. While the difference is not fully explicable within the framework of the

current study, it is possible that this relationship may be explained by considering the content of the role play interview. That is, it is possible that discussing appearance concerns made the appearance domain more salient and, hence, more likely to be used as an affirmation domain. Conversely, discussion of academic concerns may have made the academic domain more salient and more likely to be used as an affirmation domain, thereby not showing evidence of increased stake in CSWS: Appearance. If this were the case, individuals in each scenario may have been primed to make affirmations that were directed toward or away from CSWS: Appearance. However, the finding that there was no significant interaction when investigating SSES: Academic as a predictor of ΔCSWS: Academic suggests that while this explanation may be partially accurate, it does not fully account for the moderation of the observed relationship by role play scenario.

Results of hypothesis one also indicate that the theory of self-affirmation may operate differently for different domains of self-worth, particularly in regard to same- or different-domain affirmations. That is, while participants with low SSES: Appearance tended to overinvest in CSWS: Appearance, participants with low SSES: Academic did not increase their investment in CSWS: Academic. These findings mirror previous research that has found inconsistencies in regard to self-affirmation and domains of self-worth. For example, researchers found that threats directed toward an individual's sense of belonging tended to result in more same-domain affirmations than threats to an individual's intelligence, which elicited more different-domain affirmations (Knowles et al., 2010). These findings partially parallel the current study's results such that those individuals with low SSES: Appearance tended to make same-domain affirmations. Although participants with low SSES: Academic did not significantly affirm in same- or different-domains, the difference between the predictions of the

differing self-esteem types is appreciable. Thus, it is possible that domains such as belonging or appearance may be conceptualized differently within an individual than domains such as intelligence or academic self-worth and result in different directions of self-affirmation.

Hypothesis two predicted that individuals exposed to a threat to self-worth would invest in other domains of CSWS in order to maintain self-integrity. Results of the analyses in this study provided partial support for this hypothesis such that participants in the appearance role play scenario invested greater stake in domain nonspecific contingencies of self-worth than participants in the academic scenario. This relationship was found for both the ΔCSWS: Nonappearance composite and ΔCSWS: Nonacademic composite. Given that each composite differed by only one subscale, it may be presumed that participants invested generally in other domains of self-worth and did not choose a specific domain with which to self-affirm. It is noteworthy of note that there were no observed differences between participants with low or high self-esteem for both SSES: Appearance and SSES: Academic. This suggests that all participants tended to increase their stake in nonrelevant domains of self-worth, regardless of level of self-esteem.

Given that the results only partially supported hypotheses one and two, it is difficult to comment on the intention of the study to explore self-affirmation as a universal process. Participants in this study did not divest stake in the relevant domain, as predicted by self-affirmation theory, suggesting this is not a universal process. However, participants did invest generally in other domain of self-worth, as predicted by self-affirmation theory, and this was consistent across scenarios. This provides some evidence that the process of self-affirmation as a whole may not be a naturally occurring cognitive process, and instead one that that has occurred as the result of laboratory manipulations that instigate the process. However, the evidence is

limited and the results of the current study are not sufficient to fully address the question. Nonetheless, the findings do suggest that further research in this area is necessary.

Results of hypotheses one and two provided evidence of significant differences in outcomes between participants with low or high SSES: Appearance that warranted further exploration. Regarding differences in investment in CSWS between participants based on SSES: Appearance, it is evident that only those individuals with low SSES: Appearance tended to overinvest in CSWS: Appearance. This result fits with the previous literature that has found similar differences in self-affirmation dependant on levels of self-esteem. For example, research indicated that individuals with low self-esteem rationalized esteem-threatening decisions more than individuals with high self-esteem because they had less favourable self-concepts to draw from in order to self-affirm (Steele et al., 1993). Thus, exploratory analyses focused on attempting to account for the tendency for individuals with low SSES: Appearance to increase their invested stake in ΔCSWS: Appearance, as well as further understand the discrepancies between low and high SSES: Appearance.

Given the finding that those participants in the appearance role play scenario that had low SSES: Appearance invested greater stake in CSWS: Appearance, the notion that such individuals may have identified to a greater degree with the plight of the protagonist in the role play was explored. Results did indicate that participants with low SSES: Appearance identified more with the protagonist's issue than high SSES: Appearance participants. Further, a similar relationship between SSES: Appearance and identification was not apparent for individuals who discussed an academic related issue. These results suggest that the topic of discussion in the appearance role play was particularly relevant for participants with low SSES: Appearance. This finding is logical given that the appearance role play protagonist discussed problems with body image and

multiple appearance concerns, similar to problems that might be experienced in the real world by someone with low SSES: Appearance. It also serves to provide insight into why participants with low SSES: Appearance might self-affirm differently than those with high SSES: Appearance. If participants identify with the scenario to a greater degree and also feel that they don't meet their own appearance standards, they may be more likely to focus on self-affirming CSWS: Appearance in an attempt to restore their self-worth in this area. This finding is also interesting given that the observed predictive relationship took place within the context of an ecologically valid challenge to one's self-esteem through the use of the interpersonal role play. Given that a similar discussion of appearance-related concerns is likely to occur for women in their real lives, further investigation into self-affirming processes in these types of conditions is necessary.

The final exploratory analysis investigated the role of SSES: Appearance on PA and NA experienced by participants while viewing their role play video as well as whether other facets of self-esteem might better account for this relationship. This enquiry was particularly important for investigating the possible implications of the results of the study for research on body image. Results of the analyses showed that participants with low SSES: Appearance exhibited less PA and greater NA while viewing the videotape of their role play than did participants with high SSES: Appearance regardless of whether self-esteem was assessed prior to or following the role play. Of particular note was the finding that only SSES: Appearance was a significant predictor of affect; neither academic self-esteem nor a measure of global self-worth was predictive of participant's affective response to viewing their videotape. Importantly, the significant relationships between SSES: Appearance on the one hand and PA and NA on the other was apparent for all participants regardless of their role play scenario. This finding is in contrast with

other findings of the present study which indicated significant moderator effects of scenario.

This suggests that the experience of viewing the videotape of one's role play operated as a body image exposure. This notion is logical given that while viewing their role play participants spent 5 min observing their bodies on a 72-in high definition television. Participants with low SSES: Appearance appeared to find the exposure more threatening to the self, resulting in decreases in PA and increases in NA. Indeed, previous research has found that exposing women to their bodies and having them focus on them either by mirror-exposure or videotaped images results in decreases in mood and appearance self-esteem and that these effects are greater for women with more body image concerns (Hilbert, Tuschen-Caffier, & Vögele, 2002; Tuschen-Caffier, Vögele, Bracht, & Hilbert, 2002). Thus, the results of this study provide evidence that simply exposing women to images of themselves for a brief duration of time appears to pose a significant enough threat for individuals with low SSES: Appearance that it results in negative outcomes. As well, the results of this study indicate that initial levels of SSES: Appearance were able to predict the resulting positive or negative affect experienced by an individual following a body image exposure. Further, this prediction is unique to appearance self-esteem and does not appear to be related to the more general measure of self-worth of the RSES.

Indeed, it may be hypothesized that SSES: Appearance functions as one mechanism through which concerns with body image are perpetuated over time. A model of integrated findings from this study may assist in explaining this potential mechanism. According to the findings in this study, when individuals with low SSES: Appearance are exposed to a threat to the self, such as a body image exposure, they tend to invest more self-worth in CSWS: Appearance; this reaction solidifies the notion that the appearance domain is very important to

them. The threat to body image may be particularly pervasive for an individual with low SSES: Appearance because of a discrepancy experienced between their actual and ideal appearance and subsequently not meeting their appearance standards. Thus, it would follow that positive and negative affect subsequently decreases and increases, respectively, as a result of cognitions related to this discrepancy. Furthermore, the experienced NA may serve to reinforce negative body image cognitions related to initial levels of low SSES: Appearance, thereby serving to sustain poor body image. A diagram of this hypothesized cycle is presented in Figure 7. In this model, a self-perpetuating cycle arises whereby the individual repeatedly reinforces the notion that they do not meet their own appearance standards and, further, that it is very important for them to meet these standards. This cycle, when left uninterrupted, would continue to operate throughout a woman's life, leading to enduring concerns with body image. This cyclical interpretation speaks to the enduring experience of concerns with body image across the lifespan. Indeed, substantial research indicates that levels of body dissatisfaction remain high throughout a woman's lifetime (Heatherton, Mahamedi, Striepe, Field, & Keel, 1997; Tiggemann & Lynch, 2001; Tiggeman & Stevens, 1999; Johnston, Reilly, & Kremer, 2004).

The findings of this study may also have relevance for interventions addressing body image concerns. Previous research examining the effectiveness of an intervention designed to improve body image in women has suggested that advertisements presenting images of realistic female body types with the intention of increasing body self-esteem can actually lead to unintended negative consequences for women with low body satisfaction (Park et al., 2009). According to self-affirmation theory, such attempts at reducing body image concerns would likely induce same-domain affirmations. Thus, women would be more likely to behave as they did in the current study and overinvest their stake in CSWS: Appearance with subsequent

Reinforcement

High SSES:
Appearance

Body Image
Threat

Low SSES:
Appearance

Maintain
investment in
Appearance

Consistent

Increased
Positive
Affect

Increase
Investment in
Appearance

Discrepant

Increased
Negative
Affect

Reinforcement
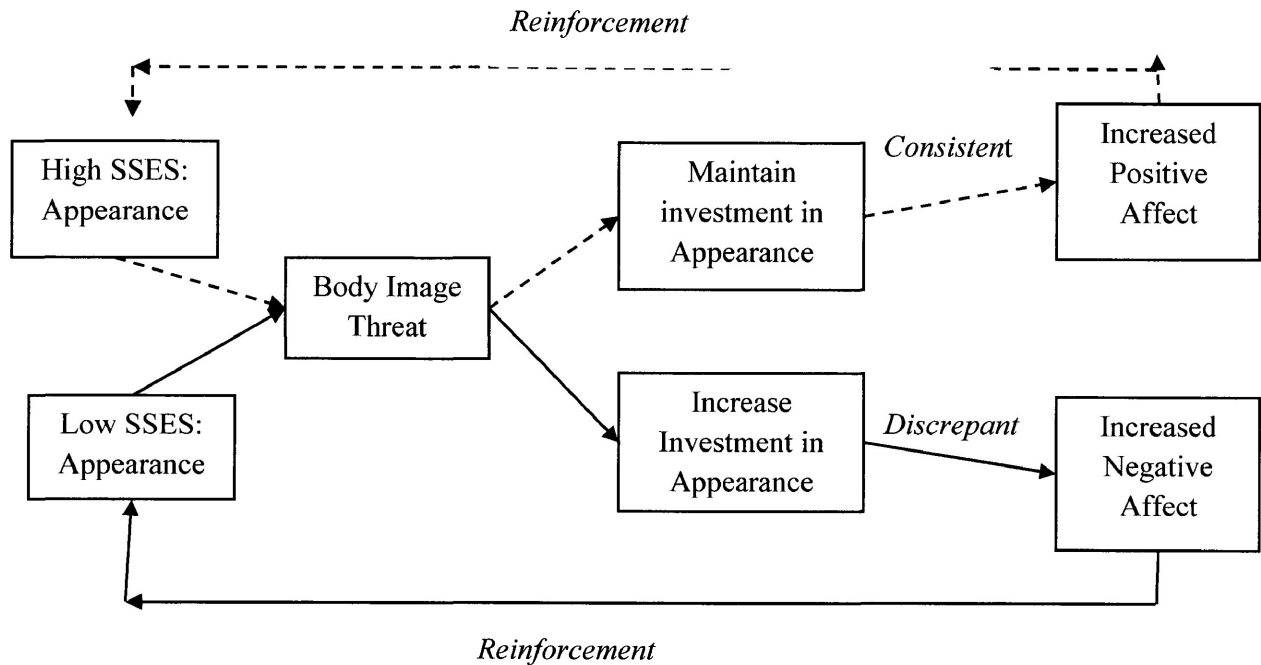
Figure 7. Hypothesized model of the cyclical nature of body image and experience.

negative consequences. Conversely, the research on same-domain affirmations suggests that the

aforementioned cycle may best be broken by a different-domain affirmation (Sherman et al.,

2006). This suggests that instead of creating body image interventions that attempt to change

women's maladaptive body image cognitions, interventions should focus on highlighting other

domains of the self as potentially more important than appearance domains.

Indeed, interventions designed to address body image in adolescents using an approach

that would implement different-domain affirmations have mirrored these findings. For example,

one study (O'Dea & Abraham, 2002) implemented a program designed to improve body

satisfaction in 11-14 year olds that focused primarily on changing aspects of the youth's self-

esteem. Interventions focused on topics such as dealing with stress, building positive sense of

self, societal stereotypes, positive self-evaluation, involving significant others in improving one's

self-esteem, and relationship and communication skills. Results indicated that female students

rated their physical appearance as perceived by others significantly higher than control students,

and further allowed their body weight to appropriately increase by preventing the increases in the weight-losing behaviours that were observed in the control students. These students also reported significantly lower drive for thinness and greater body satisfaction. These results were consistent for students with pre-existing low self-esteem and higher anxiety. Hence, while research has not yet reached a definitive conclusion regarding the most effective body image intervention programs, there is evidence that it may be more prudent to implement intervention procedures that break the enduring body image cycle by having women focus on other domains of the self.

Limitations

While the results of this study are persuasive, the study is not without limitations. First, the study did not utilize a psychometrically established academic self-esteem scale. Instead, a two-item scale derived from the Performance subscale of the SSES was used. Cronbach's alphas for the Academic subscale were low at .66 preRP and .74 postRP and test-retest reliability was also low at .64. While the Performance subscale had better psychometrics, the content validity inherent in the Academic subscale would indicate that it was suitable for use in the current study. The specific items "I feel as smart as others" and "I feel that I have less scholastic ability right now than others" appear to be sufficiently representative of academic self-esteem. However, current findings with respect to the SSES: Academic subscale should be interpreted cautiously and should be replicated in the future in order to form adequate conclusions.

Second, this study is not fully generalizable or directly comparable to the majority of studies investigating self-affirmation for the reason that it is lacking in a traditional manipulation of self-affirmation. As stated previously, most self-affirmation studies require participants to complete a task specifically designed to instigate self-affirmation; for example, having students

write an essay about an important value that differs from the perceived threat. However, the present investigation was more focused on exploring the natural process of self-affirmation and whether participants would adhere to the tenets of self-affirmation theory without explicit intervention from the experimenter. It does appear from the results of the study that the role play served as a self-affirming catalyst, particularly when noting differences in self-affirming behaviours dependent on the role play scenario. However, comparisons between a role play and a written essay manipulation may be limited. Thus, the findings of this study are relatively unique in the self-affirmation literature, and should be replicated using similar methodology before definitive conclusions may be drawn.

Finally, it would also have been useful to have implemented a follow-up assessment of the changes in contingent self-esteem observed from preRP to postRP in this study. As presented, the duration of time for which changed investment in specific domains of self-worth persisted is unknown. Implementing a follow-up investigation may have led to a greater understanding of the impact of the body image threat as well as the subsequent self-affirmation. It is important to understand the long-term effects of a self-affirmation, particularly if applied to body image interventions.

Future Directions

The results of this study add to the previous literature investigating self-affirmation theory as well as provide more considerations for the study of body image which require further investigation. Specifically, research focused on self-affirmation theory should explore the differences inherent in change of stake for varying types of self-esteem, the impact of a variety of threats to domains of self-worth, and the use of ecologically valid means of posing a threat to one's self-esteem through the use of the role play. It may be particularly useful to explore the

differing consequences of self-affirming behaviours, particularly in regard to various aspects of the self. The finding from this study that appearance and academic contingencies of self-worth may be influenced differently by diverse facets of self-esteem suggests that further research is necessary in order to fully appreciate and understand the complex nature of self-affirmation.

As well, the findings in regard to body image warrant further exploration. Specifically, it may be useful to further investigate possible changes in cognition resulting from exposure to stimuli intended to target appearance beliefs directly versus stimuli intended to refocus attention to other domains of self-worth. For example, traditional methods for addressing body image concerns in the public domain focus on introducing positive body statements. Alternative stimuli might attempt to bolster attention to other aspects of the self; for example, increasing the salience and importance of interpersonal relationships. It may also be useful to test the cyclical model presented in this paper in an experimental study in order to ascertain its potential usefulness in understanding the endurance of problematic body image.

It would be useful to explore the long-term effects of self-affirmation, particularly in regard to potential applications of body image intervention. This could be explored relatively straightforwardly using follow-up measures assessing maintenance of invested or divested stake in a specified domain. Further, it would be useful to explore repeated exposure of participants to a self-affirming manipulation. If findings from self-affirmation research are to be applied to the development of effective interventions, then it is essential to ascertain the necessary duration and repetition required in order to sustain desired change.

Finally, it may also be worthwhile to further investigate self-affirmation in the context of interpersonal relationships. The findings here indicate that a relatively noncomplex 5 min discussion of a self-relevant issue can have significant effects on an individual, particularly in

regard to discussion of appearance related issues for women with low appearance self-esteem. Given the social nature of humans, and the likelihood that women would discuss appearance related issues, relationships may be a means by which the aforementioned body image cycle is perpetuated.

In summary, the present study found that participants with low SSES: Appearance tended to overinvest in CSWS: Appearance after they engaged in an interpersonal discussion about appearance-related concerns. This relationship is at least partially explained by a tendency to identify with the concerns expressed by the protagonist in the role play. Further, participants in the appearance condition invested greater stake in nonappearance domains of CSWS, presumably in an attempt to restore self-worth. Lastly, the study found that as a consequence of low SSES: Appearance, participants were susceptible to decreases in positive affect and increases in negative affect. As a whole, results of this study have implications for a more comprehensive understanding self-affirmation theory as well as for illuminating a mechanism that may help explain the perpetuating nature of body image concerns. Further, this study provides credible evidence suggesting that more research is necessary regarding the relevance and utility of the theory of self-affirmation in the context of body image interventions.

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Appendix A

Participant Recruitment Email

Hi,
Our names are Kristine and Danielle, graduate students in the Department of Psychology. We are conducting research and looking for women volunteers to participate in our "Therapist Study" that looks at the natural helping skills of university women who volunteer to participate in a role play by taking on the character of a professional psychotherapist. The study earns you bonus points for participation in qualifying Psychology courses. To learn more about this study, visit our website by clicking on this link:

<u>www.surveymonkey.com/s/Therapist_Study</u>
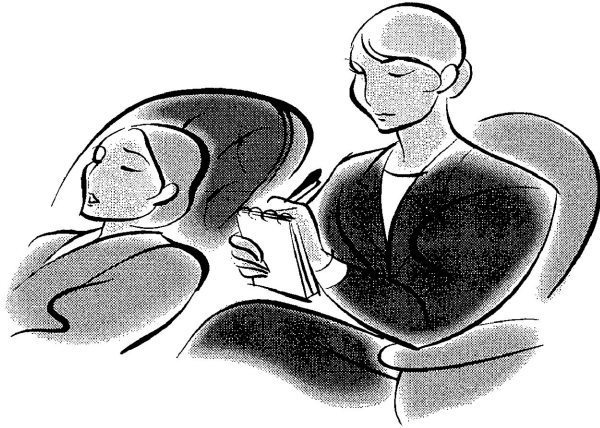
Thanks!

Kristine Knauff, M.A.
Department of Psychology, Lakehead University
E-Mail: <u>klknauff@lakeheadu.ca</u>

Danielle Ransom, B.A.
Department of Psychology, Lakehead University
E-Mail: <u>dransom@lakeheadu.ca</u>

Appendix B

Participant Recruitment Flyer

Participants Wanted

Earn $20!

Researchers at Lakehead University are looking for **females** to participate in a project called the Therapist Study.

Participation requires:

> Completion of a ½ hour online survey

> 1 hour lab session

Participants will receive $20 as compensation for their time.

For more information and online questionnaires go to:

> http://www.surveymonkey.com/s/Therapist_Study

Questions?   Contact Danielle dransom@lakeheadu.ca

https://www.surveymonkey.com/s/Therapist_Study

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Appendix C

Participant Information Letter

Dear Potential Participant:

Our names are Kristine Knauff and Danielle Ransom. We are graduate students working with Dr. Ron Davis in the Department of Psychology here at Lakehead University. We are conducting a 2-part research project called the Therapist Study.

The purpose of this study is to examine the natural helping skills and the biological responses of university women who volunteer to participate in a role play by taking on the character of a therapist.

In part 1 of this study you will first complete this confidential online survey that asks you questions about different aspects of your personality, emotions, and the ways in which you relate to other people. This online survey will take up to ½ hour of your time for which you will receive ½ bonus mark toward your Psychology course that you are enrolled in. Please note that individuals in Abnormal Psychology cannot earn bonus marks.

Part 2 of this Therapist Study requires 1 hour of your time for which you will receive an additional 1 bonus mark toward your eligible Psychology course. For this part of the study you will come into our laboratory where you will:
1. Watch portions of the video Planet Earth,
2. Role play the part of a professional psychotherapist with a female research assistant who pretends to consult you for help about a problem;
3. Donate small samples of your saliva into special vials;
4. Wear a comfortable chest strap to continuously record your heart rate;
5. Watch and rate your own recorded role-play interview.

Participation in part 2 of this study also requires that you abstain from eating any food or drinking any caffeinated beverages for at least 1 hour prior to visiting our laboratory to participate in the study. Other criteria for participation require that you are:
-female;
-non-smoker;
-not currently taking steroids or other medications for anxiety, depression, sleeping problems, cough, or high blood pressure.

There is no risk to participants of any physical harm. Participants may feel some transient degree of naturally occurring stress that could be expected to occur for some people while engaging in a role play, viewing oneself on videotape, and/or filling out the questionnaires.

Your participation in this study is completely voluntary and you may withdraw at any time without penalty. All information that you provide will be kept strictly confidential. Only the researcher and assistants will have access to your information. Your name will only be used to ensure that you receive a bonus mark toward your Psychology course final grade. The

information you provide will be coded, analyzed, and securely stored at Lakehead University for 5 years. No individual participant will be identified in any report of the results. The results will be shared with the Psychology department at Lakehead University and an article will be prepared for publication in an academic journal.

This study has been approved by the Lakehead University Research Ethics Board, located in the Office of Research at Lakehead University. If you have any concerns regarding this study you are welcome to contact the Research Ethics Board at 343-8283. You are also free to contact us if you have any questions about the study.

Thank you again for your interest in participating in this study.

Kristine Knauff, M.A.
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E-mail: ron.davis@lakeheadu.ca; Telephone: 343-8646

I have read the above information and wish to continue with this survey. Click button if you agree.

Appendix D

Participant Consent Form

By providing my name and student number below, I indicate that I have read and understood all of the information in the previous window. I further understand and agree to the following:

1. I agree to participate in this study.
2. I agree to have my image and voice videotaped for later viewing by research assistants.
3. I am a volunteer and can withdraw at any time from this study without penalty or consequence.
4. I may choose not to answer any question asked in the questionnaires without penalty or consequence.
5. There are no anticipated physical risks associated with participation in this study. Should I experience any psychological distress or discomfort, I am entitled to a list of counselling resources from the researcher.
6. My data will remain confidential and will be securely stored in the Department of Psychology at Lakehead University for 5 years.
7. My information will remain anonymous should any publications or public presentations come out of this study.
8. I may receive a summary of this research upon completion of this study.
9. I give my permission to be contacted by email for the purpose of participation in this study.

I have read and understand the above "Consent to Participate."

Appendix E

Contingencies of Self-Worth Scale

INSTRUCTIONS: Please respond to each of the following statements by circling your answer using the scale from "1= Strongly Disagree" to "7=Strongly Agree". If you haven't experienced the situation described in a particular statement, please answer how you think you would feel if that situation occurred.

1 = Strongly Disagree
2 = Disagree
3 = Disagree Somewhat
4 = Neutral
5 = Agree Somewhat
6 = Agree
7 = Strongly Agree

1. When I think I look attractive, I feel good about myself.
2. My self-worth is based on God's love.
3. I feel worthwhile when I perform better than others on a task or skill.
4. My self-esteem is unrelated to how I feel about the way my body looks.
5. Doing something I know is wrong makes me lose my self-respect.
6. I don't care if other people have a negative opinion about me.
7. Knowing that my family members love me makes me feel good about myself.
8. I feel worthwhile when I have God's love.
9. I can't respect myself if others don't respect me.
10. My self-worth is not influenced by the quality of my relationships with my family members.
11. Whenever I follow my moral principles, my sense of self-respect gets a boost.
12. Knowing that I am better than others on a task raises my self-esteem.
13. My opinion about myself isn't tied to how well I do in school.
14. I couldn't respect myself if I didn't live up to a moral code.
15. I don't care what other people think of me.
16. When my family members are proud of me, my sense of self-worth increases.
17. My self-esteem is influenced by how attractive I think my face or facial features are.
18. My self-esteem would suffer if I didn't have God's love.
19. Doing well in school gives me a sense of self-respect.
20. Doing better than others gives me a sense of self-respect.
21. My sense of self-worth suffers whenever I think I don't look good.
22. I feel better about myself when I know I'm doing well academically.
23. What others think of me has no effect on what I think about myself.
24. When I don't feel loved by my family, my self-esteem goes down.
25. My self-worth is affected by how well I do when I am competing with others.

26. My self-esteem goes up when I feel that God loves me.
27. My self-esteem is influenced by my academic performance.
28. My self-esteem would suffer if I did something unethical.
29. It is important to my self-respect that I have a family that cares about me.
30. My self-esteem does not depend on whether or not I feel attractive.
31. When I think that I'm disobeying God, I feel bad about myself.
32. My self-worth is influenced by how well I do on competitive tasks.
33. I feel bad about myself whenever my academic performance is lacking.
34. My self-esteem depends on whether or not I follow my moral/ethical principles.
35. My self-esteem depends on the opinions others hold of me.

Appendix F

State Self-Esteem Scale

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items even if you are not sure of the best answer. Again, answer these questions as they are true for you **RIGHT NOW**.

1= Not at all
2= A little bit
3= Somewhat
4=Very much
5=Extremely

1. I feel confident about my abilities.
2. I am worried about whether I am regarded as a success or failure.
3. I feel satisfied about the way my body looks right now.
4. I feel frustrated or rattled about my performance.
5. I feel that I am having trouble understanding things that I read.
6. I feel that others respect and admire me.
7. I am dissatisfied with my weight.
8. I feel self-conscious.
9. I feel as smart as others.
10. I feel displeased with myself.
11. I feel good about myself.
12. I am pleased with my appearance right now.
13. I am worried about what other people think of me.
14. I feel confident that I understand things.
15. I feel inferior to others at this moment.
16. I feel unattractive.
17. I feel concerned about the impression that I am making.
18. I feel that I have less scholastic ability right now than others.
19. I feel like I am not doing well.
20. I am worried about looking foolish.

Appendix G

Participant Demographics

1. What is your current age?
2. What is your current height (ft/in)?
3. What is your current weight (lbs)? Guess if you do not know. Do not include "lbs" or any other letters with your answer.
4. What is your relationships status?
      Married / Common-law
      Divorced / Separated
      Single
      Widowed
5. What is your ethnicity?
      Caucasian
      South Asian
      Hispanic
      African-Canadian
      Eurpoean
      First Nations
      East Asian
      Other. Please Specify:
6. What is your school enrolment?
      Full-time
      Part-time
7. What academic program(s) are you in?
8. What is/are your major(s)?
9. Are you currently receiving counselling from a mental health professional?
10. Have you in the past ever received counselling from a mental health professional?

Appendix H

Rosenberg Self-Esteem Scale

0 = Strongly Disagree
1= Disagree
2= Agree
3= Strongly Agree

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

* Items are reverse-scored.

Appendix I

Post-Study Questionnaire

We are interested in finding out your reactions to the Therapist study that you just participated in.

I found the task of viewing my video to be...

1 = Strongly Disagree
2 = Disagree
3 = Disagree Somewhat
4 = Neutral
5 = Agree Somewhat
6 = Agree
7 = Strongly Agree

1. Difficult
2. Enjoyable
3. Stressful
4. Pleasant
5. Shameful
6. Inspiring
7. Depressing
8. Positive
9. Awkward

Respond to each of these statements:
1. I understand my "client's" problem.
2. I personally related to my client's problem.
3. I too have a similar problem as my client.
4. If this role-play scenario were the real thing, I believe that I would be able to help my client with her problem.

Appendix J

Therapist Role-Play Script

For this task you are going to pretend to be a therapist. The research assistants will role play the character of a first-year university student who is seeking counselling from you for help about a personal issue. This interview will last for 5 minutes. Please act in a way that you think a therapist would act in this same situation. Get into the role of therapist as if this situation was real.

As you are wearing heart rate monitoring equipment, please avoid moving around as much as possible.

You may start the interview with this question...

So what brings you in here today...?

Appendix K

Body Image Interview Script

Therapist (Participant)- *So what brings you in here today?*

Client (Experimenter)- Well, it's something I've been struggling with for a long time, but since I came to university, it's gotten much worse. I've never really liked the way I look, but it didn't really affect me that much before I came here and started living in residence. (*pause for therapist*)

I'm always comparing myself to all of the other girls I live with and feeling like I am so much fatter and uglier than they are.   I always hear them getting compliments about how they look, but no one ever says anything like that to me. (*pause for therapist*)

I'm finding that I'm starting to take any little remark someone makes to me and trying to figure out whether they're commenting about my appearance. (*pause for therapist*)

It's getting to the point where I'm feeling anxious all the time.   I don't want to feel like this any more so I thought I had better come and talk to someone like you about it.

Client- Have you ever felt like this before?
                              OR
Have you ever seen people who felt like this before?

Therapist- *Asks about thoughts/feelings about appearance.*

Client- I've really been beating myself up a lot; always thinking that I'm just not good enough.   I'll look at myself in the mirror and just hate what I see.   My face, my stomach, my legs,   are all just disgusting to me. (*pause for therapist*)

I especially have been telling myself that I'm so lazy.   That if I only went to the gym more   and actually got in shape, that I would look and better and it would solve all my problems. (*pause for therapist*)

Then I start looking at my friends and it seems like they don't have to work at it and they're all so beautiful.   Then I get jealous and just start feeling like it's hopeless.   I could   spend 5 hours a day at the gym and I still wouldn't look as good as them.   (*pause*)

Therapist- *Asks about how it is affecting life*

Client- When I start feeling like that I just stay in my room and think about everything that's wrong with how I look.   My friends will come and invite me out to do things, I guess to cheer me up, but I can't do it because I don't want to be around them and be reminded about how much better looking they are. (*pause*)

I also am finding it hard to concentrate on other things. My mind keeps wandering back to how I look, so that even when I do manage to go out or do other things, I don't really enjoy them. I just keep obsessing about how I look. (*pause*)

Therapist- *Asks how long this has been going on*

Client- I've felt like this sometimes since I was 13, but it was usually very temporary. I would feel really down about it, but it would only be for a night, and I would feel fine the next day. (*pause*)

I'd say I started feeling like this most of the time since I moved into residence this year. At first I thought I was just having trouble getting used to living here and I would get over it, but it's been getting worse and worse throughout the year.   I don't think I've ever   felt this ugly before. (*pause*)

Academic Failure Interview Script

Therapist (Participant)- So what brings you in here today?

Client (Experimenter)- Well, it's something I've been struggling with for a long time, but since I came to university, it's gotten much worse. I've never really thought I was smart, but it didn't really affect me that much before I came here and started living in residence.   (*pause*)

I'm always comparing myself to all of the other girls I live with and feeling like I am so much dumber and incompetent than they are.   I always see them getting good feedback from their professors on their papers and exams but no one ever says anything like that to me. (*pause*)

I'm finding that I'm starting to take any little remark someone makes to me and trying to figure out whether they are commenting about my grades. (*pause*)

It's getting to the point where I'm feeling anxious all the time.   I don't want to feel like this any more so I thought I had better come and talk to someone like you about it.

Client- Have you ever felt like this before?
                    OR

Have you ever seen people who felt like this before?

Therapist- *Asks about specific thoughts/feelings about academics*

Client- I've really been beating myself up a lot; always thinking that I'm just not good enough. I'll take a look at my grades online and I just hate what I see. There isn't one course that I'm happy with how I have been doing. (*pause*)

I especially have been telling myself that I'm so lazy. That if I only studied more and actually worked harder, that I would get better grades and it would solve all my problems. (*pause*)

Then I start looking at my friends and it seems like they don't have to work at it and they're all so smart. Then I get jealous and just start feeling like it's hopeless. I could spend 5 hours a day studying and I still wouldn't do as well as them. (*pause*)

Therapist- *Asks about how it is affecting life*

Client- When I start feeling like that I just stay in my room and think about everything that's wrong my schoolwork. My friends will come and invite me out to do things, I guess to cheer me up, but I can't do it because I don't want to be around them and be reminded about how much smarter they are. (*pause*)

I also am finding it hard to concentrate on other things. My mind keeps wandering back to my grades, so that even when I do manage to go out or do other things, I don't really enjoy them. I just keep obsessing about school. (*pause*)

Therapist- *Asks how long this has been going on*

Client- I've felt like this sometimes since I was 13, but it was usually very temporary. I would feel really down about it, but it would only be for a night, and I would feel fine the next day. (*pause*)

I'd say I started feeling like this most of the time since I moved into residence this year. At first I thought I was just having trouble getting used to living here and I would get over it, but it's been getting worse and worse throughout the year. I don't think I've ever felt this stupid before. (*pause*)

Appendix L

Debriefing Form

Dear Participant:

This sheet gives you brief summary of the experience that you just completed in this study on the *influence of self-affirmation on a threat to self.*

The purpose of the study was to explore self-affirmation theory and how it applies to an individual's body image and self-esteem. Simply put, self-affirmation theory states that when individuals are exposed to a threat to the self, they are motivated to affirm another aspect of the self that is of worth, in an attempt to maintain their self-integrity.

In this study, you were given the opportunity to self-affirm a part of the self when you played the role of the therapist. You most likely did this by giving the "client" advice about how to improve their problem, advice you might give to yourself in a similar situation. Following this, you experienced a threat to the self by watching the playback of your taped interview. What we are interested in exploring is what influences differences in self-affirming have on influencing any subsequent changes in self-esteem or body image following the study tasks.

Just to make sure that you understand the basic science behind this study, we would like you to take a moment and answer the following question:

Name one psychological variable that this study is investigating:_____

If you have any questions about the study, please ask now. Do you want a brief summary of the results of this study? If so, print your LU email address and we will send it to you when it is available:

Email address:_____

Again, thank you for participating in our study!