

PREDICTING MALES' SELF-CONCEPT OF ATTRACTIVENESS AND ITS  
RELATION TO RISK BEHAVIORS AND PSYCHOLOGICAL ADJUSTMENT IN  
HIGH SCHOOL

by

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SIGNED: James Edward Hunt

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## DEDICATION

This dissertation is dedicated to my family. To my parents John and Linda, for their unconditional support of my academic ambitions, as well as, their belief in me as an academic and educator. To my sister Marcia for helping me to keep things in perspective. To my wife Christina for her faith, support, love and encouragement to continue with what I had started. Finally, to my daughter Persephone, for giving me the impetus to reach my goals.

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## ABSTRACT

The role of body image in relation to self-concept and behavioral issues is well documented in research on specialized female populations. These studies have generally focused on self-concept, behavioral, health and mental health outcomes for the participants. The present study sought to extend the existing research scope to include male populations. The link between self-concept and physical appearance was explored, as was the relationship between self-concept and behavioral and mental health outcomes. Data for the current study was obtained by using a sample of male participants from the Michigan Study of Adolescent Life Transitions (MSALT). Two waves of data from the participants' sophomore and senior year were analyzed for 666 students. Participants in the current study answered varied questions about body image including questions about their height, weight, sense of masculine appearance, value of appearing masculine to others, psychological adjustment and behaviors in which they engaged. Results from MANOVA and repeated measure ANOVA's indicate that there is a link between subjective and objective measures of masculine appearance and self-concept of attractiveness. Further analyses indicate that self-concept of attractiveness is related to psychological adjustment including self-esteem, social isolation, and depressed mood. Finally, while several significant relationships were found between self-concept of attractiveness and levels of behavioral problems in the sample, the current study did not utilize experimental design, and therefore could not test causal links between variables. Strengths of the current study in terms of design and sample are discussed. Future

directions for research in this area are suggested including item design and sample selection.

## CHAPTER 1

### INTRODUCTION

#### *Statement of the Issue*

The way a person looks influences how others view them socially (Dion, 1973), and the manner in which they perceive themselves (Hausenblas, Jannelle, Gardner, & Hagen, 2003; Trampe, Stapel, & Siero, 2007). People who are physically attractive are perceived by others to be more popular during late adolescence, nicer, healthier, and happier (Anderson, John, Keltner & Kring, 2001; Dion, Berscheid, & Walster, 1972). Within individuals, research has indicated that positive body image is associated with lower rates of depression (Kaur, Singh, & Javed, 2003), and that negative body image is associated higher rates of disordered eating in women (Haworth-Hoepfner, 2000; Rodin, Striegel-Moore, & Silberstein, 1990).

Interestingly, the bulk of research on physical attractiveness has centered on women's issues (Haworth-Hoepfner, 2000; MacKinnon, Goldberg, Cheong, Elliot, & Moe, 2003; Trampe, Stapel, & Siero, 2007), with a large quantity of this research focusing on the role of attractiveness and its relation to eating disorders. Evidence is increasingly indicating that attractiveness is also a male issue (MacKinnon et al., 2003). Research indicates that attractive males are more likely to end up in positions of authority (Anderson et al., 2001), are assumed to be better able to provide for a family and to be healthier (Furman & Baguma, 1994). Some studies indicate that these attributions regarding attractiveness are hardwired into the human psyche (Langlois, Roggman, Casey, Ritter, Rieser-Danner, & Jenkins, 1987). Other authors argue that we are

socialized to value beauty (Haworth-Hoepfner, 2000; Rodin et al., 1990). Regardless of whether this value is innate or learned, people value attractiveness in themselves and others, and make attributions based upon physical appearance. Given the value that society places on attractiveness (McReary & Sasse, 2000), it is not surprising that individual's desire to be attractive is a topic of interest. What is concerning though, is the fact that males have not been studied as much with regards to issues surrounding physical appearance (MacKinnon et al., 2003). The current study focuses on predictors of change in males self-concepts of physical attractiveness and the relation of these changes to other outcomes during the high school years.

Adolescence is a time of change. During the ages of 11-21, the developing individual is facing a gamut of challenges regarding who they are, what they will become, and what they value (Marshall, 1978; Peterson & Leffert, 1995; Simmons & Blyth, 1987). During adolescence the physical body of the adolescent undergoes numerous changes. The developing adolescent male is faced with a growth spurt, acne, hair growth, voice changes, and numerous socio-environmental changes that occur concurrently with these physical changes (Petersen & Leffert, 1995). All of these factors may impact the extent to which a person feels attractive. However, research indicates that some of the changes that are associated with adolescence may be beneficial to males self-concepts of attractiveness. In particular it has been argued that gains in muscle (which are part of the male adolescent growth spurt [Peterson & Leffert, 1995; Simmons & Blyth, 1987]) are associated with a higher self-concept of attractiveness in males (MacKinnon et al., 2003). These findings raise the question: How do changes in

masculine appearance affect male self-concept of attractiveness? At the individual level, the question centers on the issue of whether or not there is a threshold level of change in masculine appearance that is important, or if any change is beneficial to males' self-concept of attractiveness. The ensuing introductory sections seek to identify the role of the male body in identity development, the role of others in establishing a sense of attractiveness, and an outline of the current study.

### *Body Image and Identity*

One of the major challenges faced by adolescents is that their changing body may alter their perceptions of who they are. Erikson (1968) has argued that forming a stable identity or sense of self is one of the key tasks of this developmental period. However, successful identity formation is a complex task. According to Erikson (1968), forming a stable identity involves multiple components. In particular, forming a sense of identity entails an exploration of who one is and how one fits into the greater community around him. These ideas are echoed in the work of Marcia (1966) who argues that in order to form an identity the individual must actively explore their options, before committing to an identity. This commitment to an identity is not a static event; one's identity can change as the environment or the individual changes. Thus, as the adolescent male body changes, so too might their identity.

Part of identity formation within the Eriksonian perspective is related to physical appearance. Erikson's (1968) theory notes that the physical appearance of a person can influence how they think about themselves, and their identity. From this perspective, forming an identity that is masculine may include exhibiting behavioral, emotional, and

physical characteristics that are distinctly male. What is considered male varies; within any given culture, masculinity has certain components that are socially defined. Work on gender stereotypes, gender roles and gender schemas within American culture indicates that to be masculine is to be emotionally stable, achievement oriented, and to possess a strong body (Martin & Dinella, 2001; William & Best, 1982). Within the framework of identity formation, the body may play a role in helping adolescents to define themselves along gender lines. Given the links between male self-concept of attractiveness and muscularity (MacKinnon et al., 2003) and the links between athleticism (Harter, 1997) and self-esteem in males, it appears that a muscular physique is linked to self-esteem and self-concept of attractiveness for males. Particularly in the US, the ideal male body may be associated with the masculine identity of the male as a strong and assertive individual, or as an athlete.

Erikson (1968) refers to the concept of an ideal body within people as the “body self.” This body self entails the individual’s attempts to reach an ideal identity in part through physical characteristics. From this standpoint, one of the developmental tasks for adolescents is to establish a part of their identity that is linked to their physical characteristics. Previous research has focused on these issues with regards to women and anorexia, but has ignored male physicality as a central aspect of identity development until recently (Dixon et al., 2003; Edwards & Launder, 2000). Findings with female participants have indicated that women who value (a looking glass-orientation) appearing feminine have lower body-esteem, and are more prone to extreme weight loss behaviors (Haworth-Hoeppner, 2001; Rodin et al., 1990). If attaining the ideal female form is

important to female identity development and self-esteem, then attaining the physical aspects of the individual's ideal masculine self is likely to be important in male identity development. Developing a secure body identity can then be synthesized with the other parts of the individual's identity (mental, behavioral) to create a sense of identity that is secure within all domains of exploration (Erikson, 1968). From this stance, forming a secure sense of a masculine body may be directly linked with men's feelings of self-esteem and overall successful identity development. In keeping with Cooley's (1913) looking glass self, this body identity is to some extent a function of how others respond to the individual's body as it changes and becomes more attractive. These responses from others may lead to greater efforts to change the body if the individual values this aspect of their identity. While Identity Theory has not been explicitly applied in research that addresses males self-conceptualizations of their attractiveness, it may serve as a tool in guiding research that focuses upon the physique as a component of identity. Identity development theory may be particularly useful in exploring the effects of societal pressures to conform to a certain type of appearance.

#### *Symbolic Interaction and Self-Concept of Attractiveness*

Symbolic interaction theory posits that individuals' identities and their conceptualizations of self are socially constructed through interactions with others (Harter, 1999). Early symbolic interaction theory, as described by Charles Horton Cooley (1902), argued that an individual's sense of self is a representation of three separate levels of influence. Cooley (1902) defined these three components of the self as the looking glass self, the social self, and the me. Within this framework, the looking

glass self is the view of how one is perceived by others. The social self represents the identity that we portray to others through dress, appearance, behavior and conversation. In contrast, the me is thought of as the stable characteristics that are internalized and made permanent in their one's self-conceptions (Cooley, 1902; Harter 1999). Within the looking glass self, the individual forms opinions and beliefs about how others view them based upon their perception of their significant others' (family, peers) reactions. Over time these looking glass perceptions may become internalized as reality. If adolescents are exposed to significant others who value appearance, and who give feedback on their attractiveness, they may come to place a greater emphasis on their attractiveness. The adolescent can compare the values of their significant others, and how they perceive these others to view them. Depending on whether these assessments are positive or negative, they can engender feelings of adequacy or inadequacy (Harter, 1999). George Herbert Mead (1932) took Cooley's ideas a step further. According to Mead, the developing adolescent experiences others' values and expectations through interactions and comes to internalize these values leading to a socially constructed set of values that are a function of the influences of their significant others (Harter, 1999; Mead, 1932).

Symbolic interaction may be used to help explain how a developing sense of identity can be based upon physical appearance. From the perspective of Cooley (1902), feelings of physical attractiveness should be directly influenced by how attractive a person thinks others perceive them to be. Self-concept of attractiveness can be socially constructed based upon the feedback received from important others. Within this perspective, those who perceive that the people who form their looking glass value

physical appearance, individuals should feel good or bad about their appearance based upon how attractive their looking glass self is thought to be. As adolescents come to experience repeated exposure to others who value attractiveness, they may come to internalize this value and value it themselves. This outside and inside influence could lead to feelings of low self-worth if the individual values attractiveness and feels unattractive. Theoretically this perspective is supported by the literature on eating disorders in women (Haworth-Hoepfner, 2001; Morrison, Kalin, & Morrison, 2004; Rodin et al., 1990). Within this literature it has been found that women who are exposed to family members or media influences that reinforce the value of an ideal female form, and feel that they do not fit this form, are more likely to report low self-esteem and severe dieting behaviors. These findings are discussed in more depth in the next chapter. There is, to date though, little research on the extent to which men's identities and concepts of self are influenced by the values of others or their own self-concepts of attractiveness.

### *The Current Study*

Self-concept of attractiveness in men is a poorly explored area of research when compared to the study of self-concept of attractiveness in females (MacKinnon et al., 2003). With this in mind, and the literature reviewed in the next chapter, the current study seeks to explore the precursors and outcomes associated with individual differences in self-concept of attractiveness in males during the high school years. The figures presented here are briefly described, and then more fully justified in the following chapter.

Masculine appearance has been tentatively linked to perceived levels of attractiveness whether using outside raters or within person self-concept of masculinity (Marcus & Miller, 2003). Body image, as discussed previously, is thought to be a part of forming a stable identity over time. Given this information, the current study explores the extent to which both subjective self-concept of masculine appearance and objective ratings of body composition predict how attractive adolescent males feel over time (Figures 1 & 2, Path 1). As discussed earlier, Cooley (1902) would argue that individuals would be more concerned about their appearance if they perceived others to highly value looking attractive. From this symbolic interaction perspective, value of appearing masculine to others is thought to moderate the relationship between masculine appearance and self-concept of attractiveness for both subjective and objective measures. Within the current study, the value of appearing masculine is thought have a direct effect on self-concept of attractiveness for those who highly value appearing masculine to others, but who do not objectively or subjectively, appear highly masculine (Figures 1 & 2, Path 2).

Self-concept of attractiveness has been linked to some behavioral and mood outcomes in research on males (McCreary & Sasse, 2000; Wroblewska, 1997). With this in mind, the current study also seeks to explore how self-concept of attractiveness is linked to psychological adjustments outcomes such as global self-esteem, depressed mood, and social isolation (Figure 3, Path 1). It is hoped that the current study will be able to extend and build upon the findings of other studies that found limited links between males self concept of attractiveness and their self-esteem and levels of depression (MacKinnon et

al., 2003). Further, research on steroid use has indicated that males with relatively poor self-concepts of attractiveness were more likely to engage in externalizing behaviors and substance use (Adlaf & Smart, 1992; Wichstrom, 2001). However, a question in these studies remains as to whether it is steroids that cause these behaviors, or if poor self-concept leads to these behaviors and steroid use. With this in mind, the current study seeks to explore the link between self-concept of attractiveness and risk behaviors (Figure 4, Path 1). If there is a link between self-concept of attractiveness and problem behaviors, this may help inform future research on steroid use in adolescence. In keeping with symbolic interaction theory, in particular a looking glass self orientation, the link between self-concept of attractiveness and problem behaviors is thought to be moderated by the value males place on appearing attractive (Figures 3 & 4, Path 2).

Figure 1

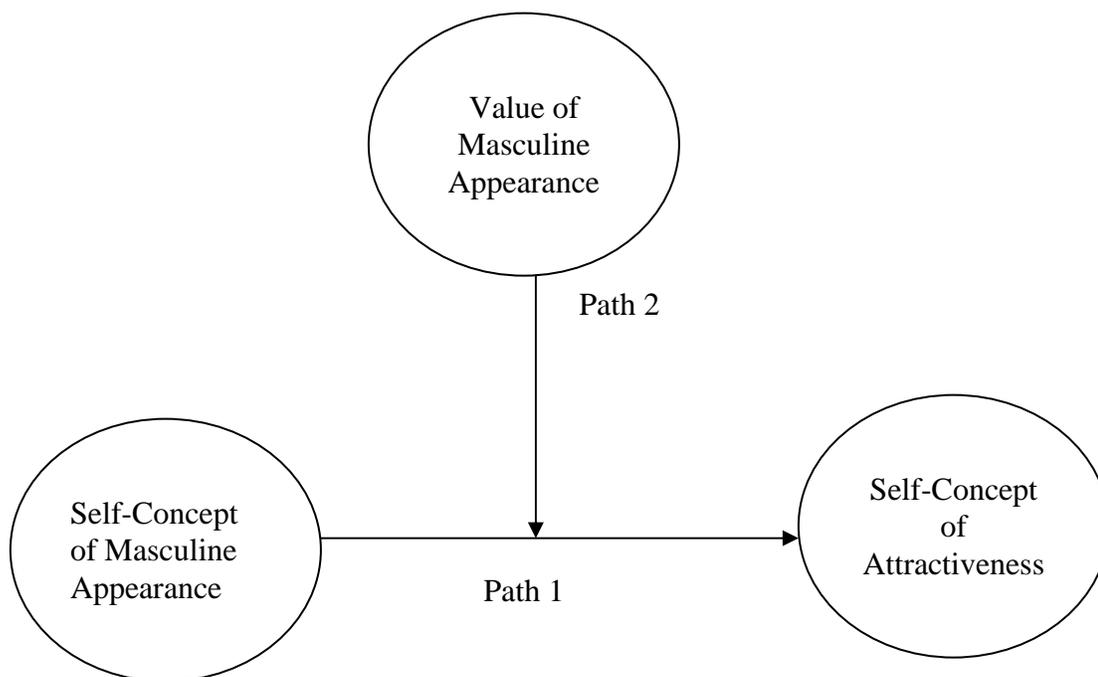


Figure 2

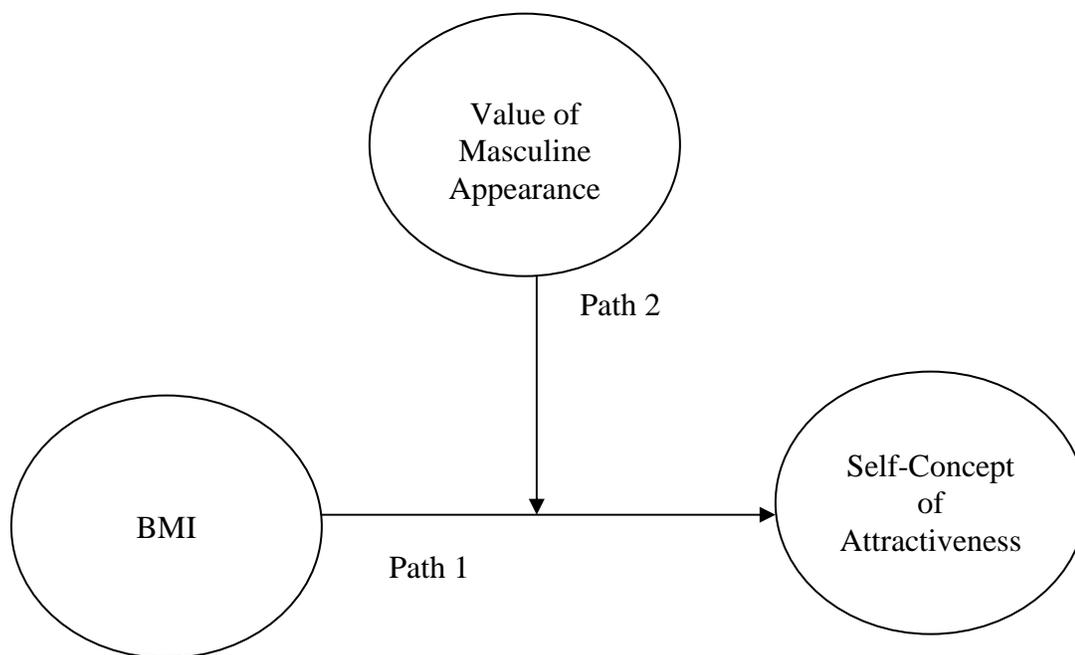


Figure 3

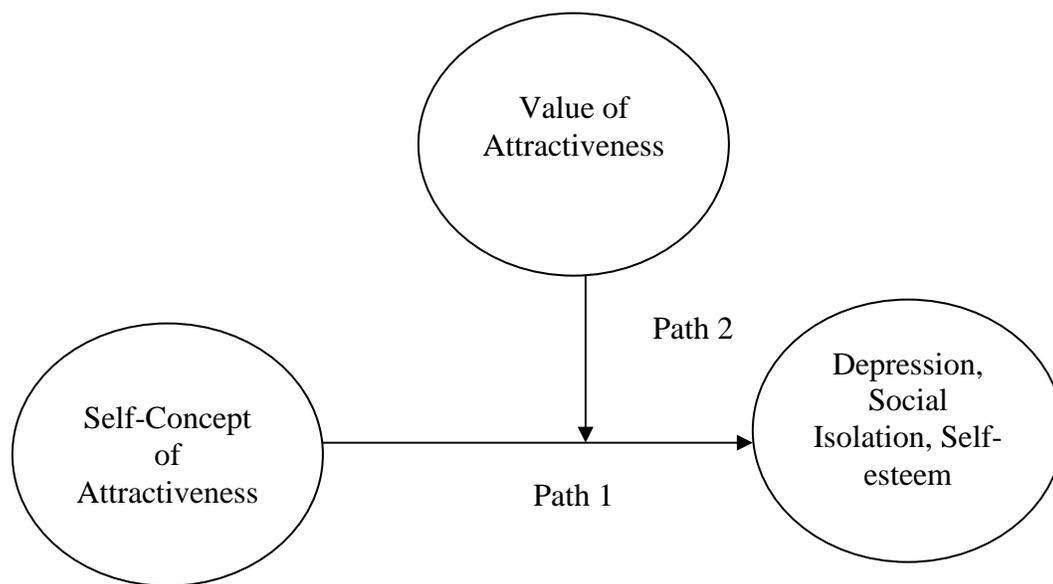
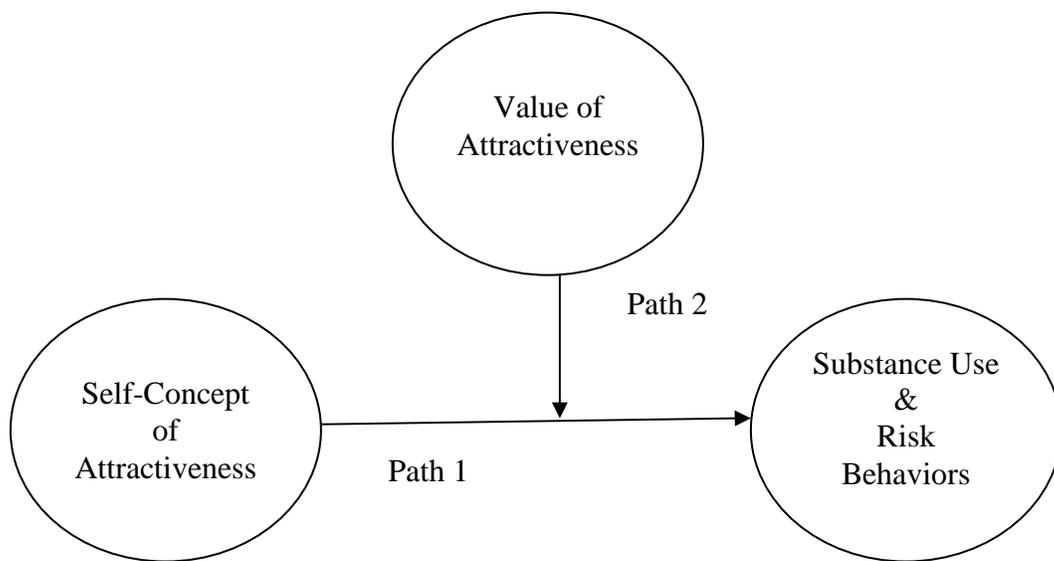


Figure 4



## CHAPTER 2

### LITERATURE REVIEW

#### *Importance of Attractiveness*

Whether it is in relation to mate selection (Murstein, 1986), attribution theories (Dion, 1973; Dion & Berscheid, 1974) or self-concept (Harter, Stocker, & Robinson, 1996), the role of physical attractiveness has been a topic of research within the social sciences for an extended period of time. It has been argued that human beings are pre-wired to prefer attractiveness in others (Langlois et al., 1987). Research indicates that infants prefer attractive to unattractive faces, and that adults show a preference for attractive children over unattractive children (Clifford & Walster, 1973; Langlois et al., 1987). Other authors have argued that humans possess internal “attractiveness stereotypes” that inform the attributions they make about unknown others (Dion et al., 1972). These findings build upon the idea that individuals assume that “what is beautiful is good” (Dion et al., 1972).

In one of the first studies of the attractiveness stereotype, Dion and colleagues (1972) found that subjects attributed more preferable personality characteristics and better life trajectories to attractive individuals than they did to less attractive persons when shown photographs of people of varying levels of attractiveness. Raters in the study ranked the more attractive targets as more likely to have a better marriage, a better job, and a happier life than the targets who were rated as less attractive (Dion et al., 1972). These results reinforce the “what is beautiful is good” concept that people may

hold regarding attractive individuals. Similarly, Erwin and Calev (1984) indicate that attractive people are more likely to be judged as having better personality traits than less attractive individuals. Anderson et al. (2001) found that a person's attractiveness was correlated with outside observers' expectations of them having an extroverted personality. However, the attributions that individuals give others based upon attractiveness are not just stereotypes; often an individual's appearance is linked to actual outcomes.

Strengthening the research on outcomes associated with attractiveness has been studies that have found a link between attractiveness and actual outcomes. These links exist in the research regardless of whether the ratings were done objectively by outside raters or are based on an individual's self-concept of their own attractiveness. Objective ratings of men's attractiveness have been correlated with their success within organizations (Anderson et al., 2001; Marcus & Miller, 2003). Anderson et al. (2001) found that men who were rated more attractive by outside raters were more likely to hold positions of esteem within fraternity and dorm settings, and were more likely to be thought of as personable. It is interesting here to note that ratings of attractiveness were done by individuals completely unrelated to the persons they rated. Yet their ratings were correlated with outcomes for the subjects they rated. This indicates that not only is beauty thought to be good, but attractiveness may actually lead to positive outcomes.

Research on self-ratings of attractiveness are also linked to outcomes (Harter, 1986; Mendelson, Mendelson, & Andrews, 2000; Wright, 1989). Self-concept of attractiveness has been linked to self-esteem, depression, and anxiety scores (Bibby,

1998; Harter, 1986; Kaur et al., 2003). Kaur and colleagues (2003) found that both men and women were concerned with their body image, but both depression and poor body esteem were correlated for women. Similarly, research has found that elementary age girls who thought of themselves as attractive had higher levels of global self-esteem (Harter, 1993). This research supports the argument that youth are aware of their appearance, and that this awareness influences their feelings about themselves. The fact that outsider opinions and self-concepts are both predictive of outcomes helps illustrate that not only do individuals hold beliefs about others based upon their appearance, but also that our opinions of our own appearance influences the extent to which we feel good about ourselves. This raises the question of how a person's appearance may come to influence their feelings of worth.

From a symbolic interaction perspective, our feelings of attractiveness are directly related to the feedback we receive from significant others in response to our appearance. According to Cooley's (1902) looking glass self, the important others in a person's life become a mirror and their opinions and responses become a reflection that informs that person's opinion of themselves. Cooley further argues that we present a social self to others, and that others respond to that social self. This creates a reciprocal interaction that constantly influences our perceived looking glass self. In this instance, the efforts one makes to look better elicits a response from significant others, that is then internalized by the individual. As this process continues, a feeling of self-worth or shame develops and becomes internalized by the individual (Cooley, 1902), resulting in changes in self-esteem or feelings of worth. Cooley's ideas were further expanded in the work of Mead

(1925, 1934 as cited in Harter, 1999). From Mead's perspective, all social interactions lead to a greater understanding of the self (Mead, 1934). Through interaction the individual learns behaviors and values that are reinforced by the responses of significant others, and comes to internalize these values and self-beliefs (Harter, 1999; MacDonald, 2007). From this perspective, not only is self-concept of attractiveness influenced by the responses of others, but the extent to which attractiveness is valued and emphasized becomes internalized over time through reinforcement. The idea of social comparison from Tajfel (1978) helps reinforce this idea. As individuals internalize values and beliefs about their attractiveness, they must have a manner in which to judge their appearance. Through comparing themselves to those around them, individuals are able to develop an understanding of how attractive they are compared to others, and this in turn can influence their self-esteem.

Adolescents vary in the extent in which they value other's opinions, and in their susceptibility to the influence of these opinions on their self-concepts. (Harter, 1999; Harter et al., 1996). Harter and colleagues (1996) found that almost one-third of their participants endorsed the idea that it was important for others to approve of them in order to have feelings of self worth. Harter and associates (1996) found that individuals who endorsed a looking glass orientation of self-worth were more susceptible to fluctuations in their levels of self-worth than were individuals who thought that approval from others came only after they valued themselves. Further, adolescents who placed high value on the opinions of classmates were more likely to focus on negative reactions by peers than on positive ones. Other research has indicated that individuals who placed higher value

on the looking glass self may not only be to more susceptible to fluctuations in self-esteem, but also are at risk for lower levels of global self-esteem, and seek out peer approval more than those who did not value the looking glass self as highly (Harter, 1999; Harter et al., 1996; MacDonald, 2007 ).

In essence, by relying on others' opinions to determine their self-worth, adolescents are comparing themselves socially on a sliding scale formed by the opinions of their peers or family members. In other words, for some people, the extent to which they feel attractive is a function of the looking glass image they receive from others, and their comparisons of themselves to the people around them. Harter (1999) argues that individuals who hold a higher looking glass orientation are more susceptible to threats to self-concepts in many realms. However, if individuals have more internalized self-concepts, then they are less susceptible to these fluctuations in feelings of self-worth. In this vein, the extent to which individuals value how others view them influences their self-perceptions.

Social referents of attractiveness that include muscularity and dominance as part of the male identity may have real impacts on individual outcomes. In fact, research has found connections between forming a secure masculine identity and an individual's sense of muscularity and body satisfaction (Bottamini & Ste-Marie, 2006; Hausenblas et al., 2003; Raudenbush & Meyer, 2003; Wichstrom, 2001; Wroblewska, 1997). Some individuals may associate the ideal male body with the masculine identity of men as a strong and assertive individuals, or as an athletes. While Harter (1997) indicates that self-concept of physical appearance is directly related to females self-esteem in

adolescence, males self-esteems were more closely tied to athletic competence. Harter's (1997) findings support the idea that the muscular athletic build could be linked to male self-concept and self-esteem. MacKinnon and colleagues (2003) found that male body image was highly correlated with feelings of self-esteem. From this stance having a masculine body is part of feeling good about one's self and appearance.

From the standpoint of Markus and Nurius (1987), the muscular ideal body may represent a possible self that the adolescent aspires to become. In the course of their exploration of possible identities, adolescents may conceive of numerous possible selves that are either attainable or unrealistic. As individuals age, they are better at judging which possible selves are attainable and which are out of reach (Markus & Nurius, 1987). Research has established that men are capable of carrying multiple mental representations of the ideal body (Raudenbush & Meyer, 2003). Raudenbush and Meyer (2003) presented college level athletes with a scale of body types ranging from thin to excessively muscular and asked them to identify where they thought they placed on the scale, what they thought the ideal body for their sport would be, and what they thought was attractive to the opposite sex. Of the athletes studied by the authors, they found that other than swimmers (who placed the attractive body type at a more muscular level than their ideal) almost all of the athletes in their study wanted to get more muscular, and thought the ideal size for their sport was at or above the level that they thought was attractive to the opposite sex. Further, the sports associated with the greatest disparity between perceived and ideal body size were more likely to use muscle enhancing supplements, and spent the most amount of time lifting weights to improve their appearance and athletic ability.

These findings support the idea that males may carry not only a current perception of who they are, but also an ideal that they want to attain, and confirm earlier research by both Erikson (1968) and Markus and Nurius (1987). These multiple body images directly mirror the conception of Cooley (1902) that individuals seek verification of their self in multiple domains in an effort to attain an identity, in this case an identity as an attractive person. The effort to attain an ideal masculine and attractive form may be the impetus for some individuals to engage in behaviors that they perceive as increasing their attractiveness.

#### *Attractiveness*

Thus far attractiveness has been referred to as an absolute quantity that is readily identifiable to all. To some extent this is true. Marcus & Miller (2003) suggest that facial features and symmetry are universally considered attractive in both genders cross culturally. Further, they point to neonate features such as large eyes and a small nose, as well as females having an hour glass figure as universally appealing characteristics (Marcus and Miller, 2003). The study of what is attractive about men is limited when compared to studies of what makes women attractive. However, Brown, Cash, and Noles (2001) found that perceived masculinity was a strong predictor of whether both male and female subjects thought a video taped target was attractive. Dixson and colleagues (2003) found that females rated mesomorphic (muscular) drawings as the most attractive in both English and Sri-Lankan populations. Other cross cultural studies have found that there are some cultural differences in the physiques that people find attractive, but that the ideal is similar for males across samples (Furman & Baguma, 1994). In one study,

Furman & Baguma (1994) found that both male and female raters from the England and Uganda thought that muscular male body figures were more attractive than either skinny or heavier figures. Where the differences occurred were at the far ends of the scale. Ugandans were more likely to rate skinnier male physiques as unattractive, whereas Britons were more likely to rate the heavier male figures as unattractive. These measures indicate that muscularity may be an important part of attractiveness for males.

The findings from Raudenbush and Meyer (2003) address the issue of what men think women find attractive. Neither Raudenbush & Meyer (2003) nor Dixson and colleagues (2003) studied facial features, but focused on body size and muscularity in determining what their participants thought was attractive. In both instances, muscular male figures were judged as more attractive by both women and men. These results indicate that while facial features may play a role in determining male attractiveness, body composition is also a significant predictor of masculine attractiveness. These findings also indicate that males self-concepts of muscularity is important in determining what they think women will find attractive (Jones, Bain, & King, 2008; Kyrejto, Mosewich, Mack, Kowalski, & Crocker, 2008; McCreary & Sasse, 2000; Raudenbush & Meyer, 2003). Thus, it appears that for men, facial attractiveness is not the whole picture; like women, men may seek an ideal male body shape in order to appear more attractive to themselves and others.

*Masculine Appearance as Attractiveness:* Determining what an attractive masculine body looks like has also been explored subjectively and objectively within the literature. It is important to understand what is meant when the phrase masculine physique is used, in

part, because if, as Erickson (1968) posited, the body ideal may be part of identity formation, then there is a need to understand what the ideal that individual is striving for is. Research within the field of adolescent steroid use suggests that many male users utilize steroids to improve their appearance (Burnett & Kleiman, 1994; Irving, Neumark-Sztaniner, & Story, 2002; Kindlundh, Isaccson, Berglund, & Nyberg, 1999; Kyrejto, Mosewich, Mack, Kowalski, & Crocker, 2008; Wichstrom, 2001; Wroblewska, 1997). While research on females who are dissatisfied with their bodies has found that they generally want to lose 5-20 pounds to reach the thin female ideal, young men are trying to gain 3-10 pounds (Hausenblas et al., 2003; Raudenbush & Meyer, 2003). In particular men are trying to increase muscularity in their chest and shoulders (not just gain weight) to fit the male ideal body image. This research finds that men who have lower shoulder to waist ratio are more likely to be dissatisfied with their bodies (Raudenbush & Meyer, 2003). From the work of Raudenbush and Meyer (2003), it appears that men are well aware of both their current and ideal physique.

In addition to subjective self-ratings, there needs to be a consideration of whether subjective self-ratings or objective outsider ratings are best in predicting outcomes. Both male and female raters are able to identify physique photos as attractive as objective outside raters (Dixson et al., 2003). These similarities in outsider and insider ratings indicate that individuals are conscious of what makes others physically attractive, and where they rate in comparison. This lends support to the idea that both subjective and objective ratings of attractiveness may be valid, but also suggests that males are conducting social comparisons of their body against others and against an ideal. This

research also indicates that for males, like females, body appearance is an important part of attractiveness.

*Self-concept of Masculine Appearance:* Appearing masculine to others can take on many forms. As discussed above, one of the central components of attractiveness in men appears to consist of having a muscular mesomorphic body. Subjective self-concept of attractiveness measures have been used in studying both male and female subjects. Musa & Roach (1973) utilized self-report measures of appearance in a study of adolescents. They found that individuals were able to rate their appearance subjectively, and that measures that asked individuals to socially compare themselves to their peers yielded results. Lerner, Orlos, & Knapp (1976) asked individuals to not only rate their appearance but also their physical effectiveness. This study found that while women's attractiveness was highly related to their adjustment, males ratings of the effectiveness of their body parts was more highly related to their overall adjustment (Lerner et al., 1976). In particular they found that females who rated themselves as more attractive were more likely to be better adjusted psychologically. This raises the point, that possibly for males, their sense of attractiveness is not as global as for females, but is more oriented towards an effective physique. This may help to explain the discrepancy between males and females in Harter's work. If the findings from Lerner and colleagues (1976) are accurate, then male self-esteem should be related to physique issues such as athleticism (a sign of effectiveness) rather than overall attractiveness as it is for women. The argument here is that male attractiveness is tied much more to a particular body type than it is for women. For men an effective and athletic body type may be the body that is most attractive.

These results indicate that male body image may be an important indicator of attractiveness, and predictor of adjustment.

Other studies that have addressed males' ratings of their appearance have found that musculature is indeed an important part of their self-concept of masculinity. McCreary and Sasse (2000) argue that males in their sample had a drive for muscularity. Their findings indicate that males who place high importance on muscularity and, who were more muscular had a higher global self-concept. Males who perceived themselves as less muscular were more prone to negative. In a study that addressed individuals musculature and self-concept MacKinnon et al. (2003) found that muscularity was related to higher self-concept in males, greater feelings of athletic competence and higher self esteem. In contrast, body fat was negatively related to these outcomes (MacKinnon et al., 2003). Adding to this desire to reach a masculine ideal for the body are cross generational findings that indicate that older men feel greater pressure to lose weight and return to a more muscular form (Lamb, Jackson, Cassiday, & Priest, 1993; McCabe & Ricciardelli, 2004).

These results support the findings of Raudenbush and Meyer (2003) mentioned earlier that indicate that the ideal male body is a muscular physically effective body. The findings regarding male body image and their consciousness of it, is a fledgling field of study, but parallels between this literature and the anorexia research with women help illustrate the fact that individuals are conscious of a particular body type that they should aspire to for their gender (Haworth-Hoepfner, 2000; Kyrejto, Mosewich, Mack, Kowalski, & Crocker, 2008; Rodin et al., 1990). Research has indicated that women who

highly value a feminine physique are more likely to engage in severe weight loss behaviors (Hausenblas et al., 2003; Haworth-Hoepfner, 2000). Within research on steroid using males, the drive to look masculine and muscular is cited as one reason that males may engage in steroid use (Hausenblas et al., 2003; Wichstrom, 2003; Wroblecka, 1997). This desire to fit a physically specific image may lead some individuals to engage in risky body altering behaviors in an effort to increase their feelings of worth. Given these findings, for the present study, self-concept of masculine appearance in subjective terms implies having a muscular masculine appearance, rather than other possibly masculine traits such as facial hair or eye width.

#### *Objective Measures of Masculine Appearance*

As mentioned earlier, for males, shoulder to waist ratio is often thought of as an objective tool for estimating muscularity and a masculine body (McCreary & Sasse, 2004; Raudenbush & Meyer, 2003; Wichstrom, 2003). Another objective tool that can be used in assessing body shape is the Body Mass Index (CDC website). The BMI is based on a mathematical proportion based on the individuals weight and height. The BMI is most commonly utilized by doctors in estimating the target weight for individuals who are either over or under weight for their height. Used properly the BMI yields an estimate of the body fat content of a given person at a given height and weight will probably have.

Research has linked BMI to subjective measures of body satisfaction and weight changing behaviors. In particular McCabe and Ricciardelli (2001) found that males with above average BMI scores were often engaged in dieting and other weight loss behaviors

(McCabe & Ricciardelli, 2001). Of particular note in this study was the fact that underweight individuals were not trying to gain mass. These findings are inconsistent with findings that muscularity is considered as a source of attractiveness. Two possible explanations can be posited for these findings that are contrary to the muscular male ideal discussed earlier. First, the individuals who scored low on BMI but were not trying to gain weight could have high levels of muscle definition and therefore appear muscular while still appearing low on the BMI. The second explanation given by McCabe and Ricciardelli (2001), is that the individuals are not defining themselves by the societal pressure to appear a certain way. This mirrors the idea of the looking glass self that was discussed earlier. If individuals do not define themselves by, or value the input of, significant others with regards to their physical appearance, then we should not expect them to engage in weight altering behaviors. This idea is supported by the fact that individuals with low BMI scores did report that their friends encouraged them to engage in weight gaining measures, yet they did not engage in these behaviors in the face of these pressures (McCabe & Ricciardelli, 2001).

Other studies using BMI scores have found that individuals who play sports have lower BMI scores than their sedentary classmates (Elkins, Cohen, Koralewicz, & Taylor, 2003). The notable exception is that football players tend to have a higher BMI than other students (Elkins et al., 2003). This pattern may appear for a number of reasons. Football requires the participant to engage in bodily contact where heavier and stronger players have the advantage. The CDC acknowledges that athletes tend to have higher levels of muscle mass that may contribute to their BMI registering at an inaccurate level for their

actual body fat level. As an objective measure the BMI is fallible but is widely used, and accepted by the medical and research community. Further, BMI is a solid objective estimate of masculine appearance. Individuals who fall in the normal to low end of the high group are most likely low in body fat, and have some musculature (CDC website, Morrison et al., 2004).

### *The Value of Appearing Masculine*

Appearing masculine and being attractive are related in many of the studies cited above and elsewhere (Lerner et al., 1976; MacKinnon et al., 2003; McCabe & Ricciardelli, 2001, 2004; McCreary & Sasse, 2004; Raudenbush & Meyer, 2003; Wichstrom, 2003). However, the findings of McCabe and Ricciardelli (2001) raise an interesting point regarding the role of internalizing the drive to be masculine in appearance. As discussed previously, according to Cooley (1902), Mead (1925), and Harter (1999), the amount that one's behavior or appearance is susceptible to barometric changes is, to some extent, influenced by the value placed on the opinions of others. If an adolescent male does not emphasize the opinions of others in determining his self-worth, then it should not be expected that he will feel poorly about his appearance when they look in the social mirror of the significant others. Only when individuals value the opinions of others, should they be concerned about how they look to these others. As such, the extent to which one's masculine appearance will affect his self-concept of attractiveness should be a function of his social comparisons based upon how he thinks others view him. If an individual highly values the male body ideal that is socially reinforced (MacKinnon et al., 2003; McCabe & Ricciardelli, 2004; McCreary & Sasse,

2000) then deviating from this norm should result in declines in their self-concept of attractiveness as it relates to masculine appearance.

Many factors can function as a looking glass for males with regards to the masculinity of their appearance. McCabe and Ricciardelli (2004, 2001), indicate that family members and friends all function to place pressure on an adolescent to look a certain way. In particular, adolescents reported feeling pressure from their mother and friends to conform to a particular body ideal (McCabe & Ricciardelli, 2001). Other studies have addressed the role of not only family and peers but the media as possible contributors to the thin female body ideal that has been linked to anorexia in women (Biby, 1998; Hausenblas et al., 2003; Haworth-Hoepfner, 2000; McCabe & Ricciardelli 2004; Rodin et al. 1990). In this sense, adolescent males see themselves reflected back in the eyes of the media, their family and their friends. Further, these reflections allow them to compare themselves to others and to judge their status (Tajfel, 1978).

Evidence from Morrison and associates (2004) indicates that males may engage in more social comparison than female adolescents. Findings from Morrison and colleagues (2004) indicate that males who engaged in more social comparison had lower appearance self-esteem, increased body dissatisfaction, engaged in more diets targeted at gaining weight, and used in pathogenic weight control practices. This study indicates that adolescent males that use media figures such as movie stars and models felt worse about their appearance than did males who did not engage in social comparisons. To this extent, for individuals who highly value the opinions of others, the media may act as a looking glass for the individual's comparison. In this study, most males responded that

they had spent less time exposed to magazines that portrayed the male body ideal than did their female counterparts, but they still engaged in significant amounts of social comparison (Morrison et al., 2004). However, these results only held for individuals who engaged in high levels of social comparison. Males who did not engage in high levels of social comparison did not exhibit the same outcomes. Given these findings, it seems even more clear that masculine appearance is most important to individuals who consciously compare themselves to alternative representations of the male ideal. In contrast, males who do not compare themselves to others, media represented ideals, or seek validation from outside sources are less prone to experience deficits in self-concept of attractiveness or self-concept of masculine appearance

#### *Affective Responses Associated with Variable Attractiveness*

Self-concept of attractiveness can influence one's emotional state. As mentioned previously, research has found that individuals who engage in high levels of social comparison regarding their body image are more likely to have lower global self-esteem than are those who do not engage in social comparison (Morrison et al., 2004). Other studies have found higher rates of depression (Bibby, 1998; Burnett & Kleiman, 1994; Kaur et al., 2003; McReary & Sasses, 2000) and anxiety (Burnett & Kleiman, 1994) in individuals with poor self-concepts related to their physiques. Most of the research with regards to self-concept of attractiveness thus far has dealt primarily with females. As discussed earlier, women who think of themselves as attractive are more likely to have higher self-esteem (Harter, 1997). Studies of anorexic women indicate that their poor self-image is related to anxiety, depression, loneliness, and a gamut of negative weight

control behaviors (Haworth-Hoepfner, 2000; McCabe & Ricciardelli, 2004, McReary & Sasse, 2000; Rodin et al. 1990). In contrast though, the research has thus far been inconclusive with regards to the role that self-concept of attractiveness plays in emotional outcomes for males.

These results raise questions as to why findings for males are not as consistent for body image as they are for females. On the extreme end of the spectrum Bibby (1998) found that men who suffer from Body Dysmorphic Disorder (BDD- a gamut of symptoms that includes intense body preoccupation, and distorted body perceptions) are more prone to declines in self-esteem, as well as increased depression and obsessive compulsive disorders. However, the results regarding non-clinical populations of males are far more complex. One reason that this may be is a failure to link body image and attractiveness in the literature. Although some studies have directly linked physical attributes to attractiveness in men (Lerner et al., 1976) more often than not, body image is assumed to be a proxy for self-concept of attractiveness in males. Many studies (including those mentioned previously) have discussed the role that body image plays in males' conceptions of attractiveness not only in themselves but in others (Brown et al., 2001; Dixson et al., 2003; Furham & Baguma, 1994; Husain & Kureshi, 1983; Marcus & Miller, 2003; Musa & Roach, 1973). Even though this body of literature acknowledges the role that body image plays in the conception of masculine attractiveness, few have addressed how the link between body image may influence self-concept of attractiveness and then link to emotional disturbances. The current study is directed at establishing a link between body image, attractiveness and mood related outcomes. Given that self-

concept of attractiveness is directly related to self-esteem and depression in women, it would seem that the same may hold true for men. However, this is a hole in the existing research on male self-concept of attractiveness. By linking body image and mood outcomes through self-concept of attractiveness it is hoped that the current study can fill a gap in the existing research which tries to make the body image-mental health connection directly (Irving & Neumark-Sztainer, 2002).

*Negative Outcomes Associated With Poor Self-Concept of Attractiveness*

The literature reviewed thus far indicates that individuals think of attractive people more favorably. Further, the argument has been made that attractive people are more likely to attain successful interpersonal positions, and to experience higher self-esteem. Recent research also suggests that poor self-esteem is linked to externalizing problems such as aggression, antisocial behavior and delinquency (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). If, as was suggested earlier, individuals who feel less attractive experience lower levels of self-esteem, then it should be expected that low self-concept of attractiveness should predict to increased participation in problem behaviors. Additionally, research with steroid-using populations has found tentative links between poor body image and problem behaviors including aggression and drug use including, but not limited to, steroids (Kindlundh, Isacson, Berglund, & Nyberg, 1999). This raises a question with regards to the current literature. As of yet, there has been a lack of research that is able to answer questions regarding decreases in problem behaviors if self-concept of attractiveness improves.

Research on steroid using males indicates that poor self-concept of attractiveness may be related to a host of negative behavioral outcomes. Individuals who use Androgenic-Anabolic Steroids (AAS) have been argued to use these substances for one of two reasons, to improve their athletic performance (linked to males self-esteem in Harter's research) or to improve their appearance. Research with AAS-using populations indicates that these individuals generally have poor self-concepts of attractiveness regardless of their reasons for use (Wichstrom, 2001; Wrobkewska, 1997). Though no direction of effect has been established in this relatively new field of research, certain findings regarding AAS users and problem behaviors do stand out.

Research that has found links between AAS use and other problem behaviors includes work done by Adlaf and Smart (1992). The authors surveyed 3892 Canadian adolescents ranging from Grade 7 to Grade 13. In their study, Adlaf and Smart (1992) found that steroid users were more likely to be doing poorly in school, and were more likely to use other drugs such as stimulants and relaxants. Similarly, Kindlundh and colleagues (1999) found that individuals who were using steroids for reasons other than athletics were more likely to use tobacco and alcohol, be truant from school and live alone. Wichstrom (2001) also found that steroid use in Norwegian teens was highly correlated with risk behaviors such as marijuana use, and conduct disorders such as damaging property. Finally, Burnett and Kleiman (1994) found that steroid use was highly correlated with aggression, depression, and other mood disturbances. These studies draw a link between steroid use and individuals who have mood disorders, conduct disorders, and who engage in other risk behaviors such as drug use. If

individuals are using steroids in an attempt to improve their appearance, then the correlation between these risk behaviors and poor self-concept of attractiveness needs to be explored.

Risk behavior is a complex and large field of study. However, research indicates that several factors relevant to this study are associated with engaging in risk behaviors. Peers have been found to have a socializing effect that maybe related to the looking glass self when it comes to risk behavior. The work of Dishion, Spraklen, Andrews, and Patterson (1996), regarding the socialization of anti-social behavior is especially relevant to this point. Dishion and colleagues (1996) argue that deviant peers reinforce each other for their risky behaviors, creating a training ground for deviant behavior. In this case one's looking glass self is receiving reinforcement for negative actions from significant others. Dishion and associates (1996) found that deviant peers spent more time discussing risky behavior and bragging about these behaviors than did non-deviant peers. In essence, adolescents who engage in risky behavior such as substance use or aggressive behaviors are more likely to associate with peers who encourage these behaviors. The findings regarding self-esteem and externalizing problems discussed earlier create an interesting link given the existing literature. These findings are echoed in research on AAS use in adolescent populations. Wrobkewska (1999) found that individuals who used steroids were more likely to report high levels of substance used and externalizing behaviors amongst their peers. If individuals who are low in self-concept of attractiveness do experience lower levels of self-esteem, then perhaps this may lead them to exhibit increased levels of externalizing behaviors. From this stand point, poor self-concept of

attractiveness may lead to associating with peers who reinforce externalizing and substance use behaviors. A point of clarification is necessary here. Research has indicated that athletes are more prone to use of alcohol than are most of their classmates (Barber, Eccles, & Stone, 2001; Eccles & Barber, 1999). Therefore, when addressing issues of substance use in adolescent populations, it is necessary to control for athletic status before any analyses of substance use patterns and self-concept of attractiveness can be addressed.

### *Valuing Attractiveness*

As discussed previously, poor self-concept of attractiveness should only predict to negative outcomes if the individual values being attractive. That is, if an individual feels they are unattractive, but does not care about societal pressures to look a certain way, then there should be little impact of poor self-concept of attractiveness. Returning to the concept of the looking glass self, feelings of self-worth should only be threatened if one values the opinions of others regarding their appearance (Harter, 1999; Harter et al., 1996). Research with anorexic women indicates that individuals who highly value attaining the ideal female appearance are more prone to negative behaviors, lower self-esteem, and higher levels of depression (Biby, 1998; Burnett & Kleiman, 1994; Kaur et al., 2003; MacKinnon et al., 2003; McCabe & Ricciardelli, 2001, 2004; McReary & Sasses, 2000; Morrison et al., 2004). Of note are the findings from Morrison and colleagues (2004) who found that social comparison, or a looking glass orientation, along with pressure from peers or mothers to look a certain way were predictive of poor body image and weight altering behaviors. It is possible then, that valuing the opinions of

others or the societal message to look a certain way may be highly predictive of the extent to which males will also experience negative outcomes as a result of poor self-concept of attractiveness.

## HYPOTHESES

### Hypothesis 1:

Self-concept of masculine appearance will predict self-concept of attractiveness. Individuals who think of themselves as more masculine in appearance will have higher self-concepts of attractiveness than individuals who do not think of themselves as masculine in appearance. This relationship will be moderated by the value that the individual places on masculine appearance. The strength of the link between self-concept of masculine appearance and self-concept of attractiveness will be stronger for those who highly value masculine appearance. (Figure 1)

### Hypothesis 1A:

If self-concept of masculine appearance increases or decreases over time, then self-concept of attractiveness should rise or fall in relation. This relationship will be moderated by the value placed on masculine appearance. As masculine appearance decreases over time we should expect individuals who highly value masculine appearance to show a decrease in self-concept of attractiveness, and individuals who highly value masculinity and show increases in masculine appearance over time should feel more attractive. For individuals who do not highly value masculine appearance, these changes should have less of an impact.

### Hypothesis 2:

BMI will predict self-concept of attractiveness. Men with mid range BMI will think of themselves as more attractive than individuals with either high or low BMI. This relationship between BMI and self-concept of attractiveness will be moderated by the value of masculine appearance. Individuals who highly value masculine appearance will be more likely to think of themselves as attractive if they are either mid or high in BMI than individuals who have low BMI and value masculine appearance, or individuals who have normal or high BMI and do not highly value masculine appearance. (Figure 2)

### Hypothesis 3:

Self-concept of attractiveness will predict psychological adjustment, including self-esteem, depressed mood, and social isolation. Individuals who think of themselves as less attractive will be more likely to have low self-esteem, and higher levels of social isolation and depressed mood. This relationship will be moderated by the value placed on attractiveness. Having a low self-concept of attractiveness will be particularly problematic for individuals who highly value being attractive. (Figure 3)

### Hypothesis 3A:

As self-concept of attractiveness increases over time, then depression and social isolation should decrease for individuals who highly value looking good while

self-esteem should increase. Similarly, individuals who feel they are less attractive over time, and who highly value attractiveness should show increases in depression and social isolation, and decreases in self-esteem.

Hypothesis 4:

Self-concept of attractiveness will predict risk behaviors such as substance use, violent behavior, truancy property damage and thrill seeking. Individuals who think of themselves as less attractive will be more likely to engage in substance use and acting out behaviors. This relationship will be moderated by the value placed on attractiveness. Having a low self-concept of attractiveness will be particularly problematic for those individuals who highly value attractiveness. (Figure 4)

Hypothesis 4A:

As self-concept of attractiveness increases over time, then substance use and risk behaviors should decrease for individuals who highly value looking good. Individuals who feel they are less attractive over time, and who value attractiveness should show increases in behaviors such as fighting, property damage, and substance use.

## CHAPTER 3

### METHODS

#### *Study Design and Sample*

The data for the current study are from the Michigan Study of Adolescent Life Transitions (MSALT). MSALT is a 22-year nine-wave, longitudinal study originally designed to examine the impact of school and family environments on early adolescents' achievement related self-concepts, interests, and motivations. Further, the original design of the study sought to study the normative and non-normative transitions of adolescents into and through middle school (Barber, 1994; Eccles et al., 1989). The continuing project has sought to study transitions into and out of high school, and into young adulthood. The original sample began in 1983 with a cohort of 2909 sixth graders, recruited from 12 school districts in southeastern Michigan. The original sample was recruited through letters sent home via the participants' sixth grade math class. Table 1 presents the design for data collection for Waves 1-6 and the number of participants at each wave. The majority (90%) of the participants are from white, middle- and working-class families (Linver, 1998). Data were collected in 9 waves. Wave 1 data collection began when the subjects were in their first semester of 6<sup>th</sup> grade. One of the school districts had combined 5<sup>th</sup> and 6<sup>th</sup> grade class rooms, resulting in 100 participants who were younger than the rest of the sample. The 2<sup>nd</sup> wave of data collection occurred during the spring semester of the same academic year as Wave 1. Waves 3 and 4 were collected in the fall and spring of the participants' 7<sup>th</sup> grade year. At Wave 5, six of the original 12 schools were selected to remain in the study. Wave 5 data were originally collected

during the spring of the participant's sophomore year. The following year data were collected from 2 more of the original 12 schools resulting in a small portion of individuals who were in the spring semester of their junior year during Wave 5 data collection. Wave 6 data were collected in the spring of the participants' senior year. At Wave 6 two more of the original 12 schools were included. However, there was a fire at one of the Wave 5B schools on the day that data collection was scheduled resulting in no questionnaire data for individuals at that school for Wave 6 (Table 1).

The current sample was drawn from the male respondents who completed the survey at Wave 5 (Grade 10/11) and Wave 6 (Grade 12). The first set of analyses reflects those males who completed the questionnaire data at Wave 5 only. The remaining analyses focus on those male participants who had data at both Waves 5 and 6. In all, 666 males participated at Wave 5 and 382 males participated in both Wave 5 and Wave 6. The current study focuses on the high school survey data from the male respondents who had complete data on measures of psychological adjustment and appearance variables at Waves 5 and 6 for time specific analyses, and complete data at both waves for the analysis of change.

### *Procedures*

To recruit participants at Wave 1, researchers contacted the Michigan Department of Education in order to identify school districts within 65 miles of Ann Arbor that had school transitions between 6<sup>th</sup> and 7<sup>th</sup> grade. Twelve schools were originally approached to participate in the study, all twelve agreed to participate. Parents of the 6<sup>th</sup> grade students were sent permission slips during the fall, and 79% of the eligible 6<sup>th</sup> graders

were able to participate in the study (Linver, 1998). Students in Waves 1-4 completed pencil and paper surveys in their math classrooms over two class periods. Additionally, the parents of the participants were surveyed at Waves 1-4. At Wave 1 1962 mothers responded to survey items regarding their expectations and interactions with their child.

At Waves 5 and 6 (Grades 10 and 12), passive parental consent procedures were utilized. Use of passive consent was allowed because active consent had been obtained during the earlier waves of data collection. Parents were notified that the study would be taking place and asked to call the school if they did not want their child to participate. Adolescents completed the surveys during school hours in the spring semesters of 1988 (6 of the original schools) and 1989 (2 of the original schools). Data were collected for 666 male respondents at Wave 5. Wave 6 data were collected during the spring semester of 1990. At Wave 6, 611 males participated, of whom 382 had completed surveys at Wave 5 as well. For both Wave 5 and 6 students were excused from their normal classes to complete the survey. The adolescents completed a pencil and paper survey that covered a number of topics related to experience and perceptions of school, family, peer, and the self. Participants filled out the surveys in large rooms within the school, usually the cafeteria or auditorium. Students were allowed two 50 minute class periods to complete the surveys, and staff members were present to answer any questions. In order to maintain as large a sample as possible, students who were absent the day of data collection, but who had participated in earlier waves, were mailed surveys with postage paid return envelopes. There was no financial compensation offered for completing the surveys.

Table 1

MSALT Design, Waves 1-6

Wave	1	2	3	4	5	<u>5b</u>	6
Year	Fall 1983	Spring 1984	Fall 1984	Spring 1985	Spring 1988	Spring 1989	Spring 1990
Grade		6		7	10	11	12
Sample		2909		2619	1304	188	1842
N of Males		1173		1089		666	611

### *Measures*

The constructs used in this study are outlined below. Descriptive statistics for all scales and items at Wave 5 are shown in Table 2 including the item mean, standard deviations, item ranges, and the number of respondents at Wave 5. Table 3 reports similar data on variables of interest for individuals who participated in both Wave 5 and 6.

*BMI.* Participants responded to questions asking their height and weight at both Waves 5 and 6. BMI was calculated using the following formula  $BMI = (\text{weight in pounds} / \text{height in inches}^2) \times 703$ . This formula resulted in a raw score between 0 and 49 for all individuals at both waves. Individuals were then placed into a BMI category based on the CDC established guidelines. Participants with scores of 0-18.5 were classified as underweight and given a score of 1 (Wave 5 n=58, Wave 6 n=15). Individuals who scored between 18.5 and 24.9 were classified as normal in BMI and given a score of 2 (Wave 5 n=459, Wave 6 n=286). Overweight individuals fell into one of two remaining groups. Participants with a BMI of between 25 and 29.9 were scored as a 3 and labeled overweight (Wave 5 n=85, Wave 6 n=77), while individuals who scored above 30 were given a score of 4 (Wave 5 n=18, Wave 6 n=10) and classified as highly overweight (CDC WEBSITE). Descriptive statistics of both the raw and grouped BMI scores appear in Tables 2 and 3.

*Self-Concept of Masculine Appearance.* Self-concept of masculine appearance was a one-item measure that asked participants to rate their appearance on a seven-point scale at both Waves 5 and 6. The item asked participants “I look as though I am” and responses ranged from 1= “very masculine” to 7=“very feminine”. A categorical variable

was made for this variable at both Wave 5 and Wave 6. Males who considered themselves to look “very masculine” were classified as high in self-concept of masculine appearance and given a value of three (Wave 5 n=138, Wave 6 n=119), participants who scored themselves as a 2 were assigned to the middle group and given a value of 2 (Wave 5 n=206, Wave 6 n=193). Finally individuals who did not consider themselves as highly masculine as their peers (scores of 3-7) were assigned to the lower self-concept group and given a value of 1 (Wave 5 n=234, Wave 6 n=119). These categories follow roughly an even split at the 33<sup>rd</sup> percentile. This grouping was created in an effort to discern if individuals with the highest self-concept of masculine appearance differed from individuals who classified themselves as second highest, and from individuals at all other levels of the item.

*Value of Appearing Masculine.* A single item measure at both Waves 5 and 6 was used to assess the extent to which individuals valued appearing masculine to others. The item asked individuals to rate on a seven-point scale “How important is it to you to engage in activities that make you appear masculine?” Answers ranged from 1= “not at all important” to 7=“very important”. This item resulted in 581 responses at Wave 5 only and 259 completed responses for individuals who participated in both Wave 5 and 6. Scores on this item were again categorically split as close to the median as possible. Individuals who highly valued appearing masculine (scores of 5 or above) to others were assigned a value of 2 (Wave 5 n=303, Wave 6 n=214). Responses 4 and below on importance of appearing masculine to others were assigned a 1 for the categorical variable (Wave 5 n=303, Wave 6 n=214).

*Self-Concept of Attractiveness.* A single item was used to assess the respondents' self-concept of attractiveness at both Waves 5 ( $N=646$ ) and 6 ( $N=382$ ). Individuals were asked "Some people feel they are very good looking and other people feel they are less good looking. How good looking do you feel you are?" Participants responded on a 7-point scale ranging from 1="not good looking" to 7="very good looking." This item was left in its' original form when used as an outcome for hypotheses 1 and 2. A categorical variable was created for self-concept of attractiveness as a predictor in hypothesis 3 and 4. Due to high cell counts for some of the responses a strict 33<sup>rd</sup> percentile cut was not feasible. Individuals who rated themselves as moderately to less attractive (scores of 1-4) were assigned to the low self-concept of attractiveness group (Wave 5  $n=345$ , Wave 6  $n=287$ ). Participants with a scores of 5 on the original item were assigned to the mid grouping for self-concept of attractiveness (Wave 5  $n=193$ , Wave 6  $n=101$ ), and individuals who rated themselves as highly attractive (scores of 6 and 7) were assigned to the high self-concept of attractiveness group (Wave 5  $n=120$ , Wave 6  $n=101$ ).

*Value of Attractiveness.* The extent to which individuals valued attractiveness was quantified using a single item at both Wave 5 and 6. Participants were asked to rate on a seven-point scale "How important is it to you that other people think you are good looking?" Answers ranged from "not at all important" to "very important." This variable was again dichotomized for use in repeated measures ANOVA's. Individuals who placed less importance on appearing attractive to others (scores of 5 and below) were assigned to the low value group (Wave 5  $n=416$ , Wave 6  $n=254$ ), individuals who placed more importance on appearing attractive to others were assigned to the high value group (Wave

5 n=228, Wave 6 n=236). Ideally a median split would have been used, but in order to keep the grouping intact across waves more individuals ended up in the lower value group than the higher value group at Wave 5.

*Psychological Adjustment.* Participants responded to a set of items about psychological adjustment at Waves 5 and 6. The seven-point items began with “How often do you...” and responses ranged from “never” to “daily.” Self-esteem was measured with 3 items (Cronbach alphas = .74 at Wave 5 and .77 at Wave 6) including “feel sure about yourself,” “feel satisfied with who you are,” and “feel good about yourself.” Depressed mood was measured with 3 items: (Cronbach alphas=.63 at Wave 5 and .64 at Wave 6) that included “feel unhappy sad or depressed?”, “lose your appetite or eat a lot when you get upset?”, and “feel that difficulties are piling up so high that you can’t overcome them?” Social isolation was measured using a single item: “feel lonely?” Each of the three psychological adjustment scales was significantly correlated with itself between Wave 5 and Wave 6. These correlations were, however, moderate (less than .50 for all three items) indicating that the mood state variables had adequate variability to allow for the consideration of change from Wave 5 to Wave 6. Within-wave correlations between these scales are reported in Table 6.

Table 2

*Wave 5 Descriptive Statistics for Ordinal Outcome Variables.*

Variable	M	SD	Range	<i>n</i>
Wave 5 Height in Feet	5.29	0.46	4-6	628
Wave 5 Height in Inches	6.26	3.82	0-11	627
Wave 5 Weight in Pounds	152.84	27.52	78-300	624
Wave 5 Body Mass Index	22.01	3.24	14.78-34.66	620
Wave 5 Body Mass Index Group Level	2.10	0.58	1-4	620
Wave 5 Disobey Parents	3.24	1.86	1-7	587
Wave 5 Punch or Push another Student	2.46	1.67	1-7	589
Wave 5 Create Graffiti at School	2.36	1.85	1-7	585
Wave 5 Bring Alcohol or Drugs to School	1.39	1.25	1-7	583
Wave 5 Use Alcohol Outside of School	2.58	1.89	1-7	580
Wave 5 Use Drugs Outside of School	1.54	1.42	1-7	567
Wave 5 School Troubles (Skipping)	1.75	1.06	1-7	590
Wave 5 Depressed Mood	3.63	1.28	1-7	567
Wave 5 Self-Esteem	4.77	1.21	1-7	567
Wave 5 Social Isolation	3.62	1.66	1-7	561

Table 3

*Wave 6 descriptive Statistics for Ordinal Outcome Variables.*

Variable	<i>M</i>	<i>SD</i>	Range	<i>n</i>
Wave 6 Height in Feet	5.41	0.52	4-6	230
Wave 6 Height in Inches	6.09	5.07	0-50	230
Wave 6 Weight in Pounds	167.04	56.99	100-934	229
Wave 6 Body Mass Index	23.12	5.41	16.60-88.78	229
Wave 6 Body Mass Index Group Level	2.19	0.55	1-4	229
Wave 6 Police Contact	1.77	1.09	1-7	305
Wave 6 Thrill Seeking	3.38	1.69	1-7	304
Wave 6 Damage Property	1.76	1.20	1-7	302
Wave 6 Disobey Parents	2.94	1.54	1-7	228
Wave 6 Fight With Another Child	1.51	1.01	1-7	227
Wave 6 Get Suspended	1.26	0.73	1-7	305
Wave 6 Bring Alcohol or Drugs to School	1.45	1.14	1-7	302
Wave 6 Use Alcohol Outside of School	4.26	2.59	1-8	227
Wave 6 Use Drugs Outside of School	1.38	1.19	1-7	305
Wave 6 School Troubles (Skipping/Visit to Principal)	2.81	1.41	1-7	307
Wave 6 Depressed Mood	3.18	1.24	1-7	359
Wave 6 Self-Esteem	5.03	1.21	1-7	359
Wave 6 Social Isolation	3.24	1.48	1	359

Table 4

*Wave 5 Descriptive Statistics for Ordinal and Categorical Predictors and Outcomes.*

Variables	<b>M</b>	<b>SD</b>	Range	<i>n</i>
Self-Concept of Masculine Appearance Ordinal	4.43	1.29	1-7	578
Self-Concept of Masculine Appearance Categorical	1.83	.79	1-3	578
Value of Appearing Masculine Ordinal	4.87	1.85	1-7	581
Value of Appearing Masculine Categorical	.52	.50	1-2	581
Self-Concept of Attractiveness Ordinal	4.50	1.29	1-7	646
Self-Concept of Attractiveness Categorical	1.66	.77	1-3	646
Value of Attractiveness Ordinal	4.87	1.57	1-7	644
Value of Attractiveness Categorical	1.35	.48	1-2	644

Table 5

*Wave 6 Descriptive Statistics for Ordinal and Categorical Predictors and Outcomes.*

Variables	<b>M</b>	<b>SD</b>	Range	<i>n</i>
Self-Concept of Masculine Appearance Ordinal	2.19	1.04	1-7	431
Self-Concept of Masculine Appearance Categorical	2	.74	1-3	431
Value of Appearing Masculine Ordinal	4.16	1.67	1-7	432
Value of Appearing Masculine Categorical	.50	.50	0-1	432
Self-Concept of Attractiveness Ordinal	4.52	1.19	1-7	572
Self-Concept of Attractiveness Categorical	1.68	.76	1-3	574
Value of Attractiveness Ordinal	4.58	1.68	1-7	573
Value of Attractiveness Categorical	1.35	.48	1-2	490

*Risk Behaviors.* Risk behaviors were assessed using several items at Waves 5 and 6. At Wave 5 the items asked respondents “In the last six months, about how many time did you....”. Possible responses to these items included 1=“never”, 2=“1-3 times”, 3=“4-10 times”, 4= “11-15 times”, 5=“16-20 times”, 6=“20-30 times”, and 7=“31 or more.” At wave 5 these items included “disobey your parents on an important issue?”, “punch or push another student around?”, “write or draw on school property when you were not supposed to?”, “bring alcohol or drugs to school?”, “drink alcohol outside of school?”, and “use illegal drugs outside of school?”. Further, a school truancy variable was created at Wave 5. This scale variable is comprised of 2 items at Wave 5, which asked students how often they had “skipped a class?”, or “skipped a day of school?”, students could respond on the same metric as the previous risk behavior items. This scale exhibited good reliability with a Cronbach’s Alpha of .77.

Risk behaviors at Wave 6 were assessed using several single item measures and a school trouble scale item. All items asked the participants to “Think about the last 6 months. How often in the last 6 months did you do the things listed below?” Possible responses to these items ranged from 1=“never”, 2=“once”, 3=“2-3times”, 4=“4-6 times”, 5=“7-10 times”, 6=“11-20 times”, and 7=“21 or more.” Similar to Wave 5 these items included “disobey your parents on an important issue?”, “bring alcohol or drugs to school?”, and “use chemicals or drug other than marijuana outside of school?”. Additional items were utilized at Wave 6 to assess risk behaviors. These items included “damage public or private or public property?”, “have contact with the police for something you did or that they thought you did?”, “do something dangerous just for the

thrill of it?” , “get into a fist fight with another kid?”, “get suspended from school?”, and “drink alcohol?”. Similar to Wave 5 a school trouble scale was created. In addition to asking the students how often they had “skipped a class?” and “skipped a day of school?” Students were also asked how often they had been “...sent to the principal’s office or the assistant principal’s office?”. These items yielded strong reliability with a Chronbach’s Alpha of .80. This scale reflects an overall mean of the likelihood that individuals have experienced trouble with in the school system.

Table 6

*Inter-wave Correlations of Psychological Adjustment Variables*

		Depressed Mood Wave 5	Depressed Mood Wave 6	Self- Esteem Wave 5	Self- Esteem Wave 6	Social Isolation Wave 5	Social Isolation Wave 6
Depressed Mood Wave 5	Pearson $\rho$						
Depressed Mood Wave 6	Pearson $\rho$	.469 **					
Self- Esteem Wave 5	Pearson $\rho$	-.318 **	-.202 **				
Self- Esteem Wave 6	Pearson $\rho$	-.278 **	-.345 **	.413 **			
Social Isolation Wave 5	Pearson $\rho$	.299 **	.481 **	-.168 **	-.308 **		
Social Isolation Wave 6	Pearson $\rho$	.502 **	.336 **	-.258 **	-.226 **	.379 **	

Note: \*\*= $p < .005$

### *Attrition Analysis*

Due to the longitudinal nature of the planned analyses, attrition in the sample is a concern. Several comparative analyses were conducted for the current sample, to examine whether selective attrition might be expected to influence the interpretation of results. It is important to note that the analyses include only the male participants, as they are the focus of this study. Further, a valid response to the self-concept of appearance item was used at Wave 5 to determine participation status, because without that item, the respondent could not be included in the analyses for this study.

At Wave 1, 1,173 males participated in the study. Subsequent decisions about school inclusion and participant attrition resulted in 646 males responding to the self-concept of appearance item at Wave 5 (a loss of 573 males). Attrition analyses were conducted with two different pairs of sub-samples. The first set of analyses compares all males who participated in Waves 1 and 2 but not at 5 (Attrition Sample) to those males who responded to the self-concept of appearance item at Wave 5 (Inclusion Sample). The second set of analyses compare individuals who completed the self-concept of appearance item at both Waves 5 and 6 [( $n=382$ ) Inclusion Sample] to those males who had completed the item at Wave 5 but did not respond to it at Wave 6 [( $n=264$ ) Attrition Sample].

The purpose of these analyses was to determine whether there were significant differences between participants who were included in the analyses for this study and those who were not on variables of interest to this study. Respondents in the first sub-sample were compared on demographic variables including mother's education and

ethnicity. In an effort to address possible differences between family influences in the current study, variables from the surveys of parents of the respondents completed at Waves 1 and 2 were included. Parent survey variables also included the parents' perception of the child's pubertal timing at Wave 2 and the importance that the respondent's mother placed on their child's attractiveness. Individual level variables included school attachment at Waves 1 and 2, the importance of attractiveness to the respondent at Wave 2, and self-concept of attractiveness at Wave 2. Results of cross tabulations and independent t-tests are presented in Table 9 for categorical variables, and Table 10 for continuous variables. Table 7 indicates that the inclusion Sample in the current study did not vary from the Attrition Sample in parental conceptions of pubertal timing, but the difference in ethnicity approached significance. The differences in ethnicity suggest that White participants were marginally more likely to stay in the longitudinal sample. The Inclusion Sample in the current study was not significantly different from the Attrition Sample in either of the parent variables: importance of child's attractiveness or mother's education level (Table 8). At the individual level, individuals who remained in the sample at Wave 5 were significantly more attached to school at both Waves 1 and 2 of data collection, but did not differ from the attrition population in self-concept of attractiveness or the value of attractiveness.

The second set of attrition analyses focused on the differences between the Retention sample who responded at both Waves 5 and 6 and the Attrition Sample who responded at Wave 5 of data collection but not Wave 6. The two samples were compared to each other using all variables of interest in the current study. Independent T-tests were

run to determine if there were significant differences between the two samples on the Wave 5 variables for the current study. The results of these analyses are reported in Tables 9 and 10.

The two samples are not significantly different on most variables of interest. Demographically, family income and mother's education (as reported by the students) did not vary significantly between the two sub-samples. At the individual level the two samples did not differ significantly in their self-concept of attractiveness or masculine appearance, value of masculine appearance, or their BMI scores. For the adjustment variables, Inclusion Sample not differ significantly from the Attrition Sample on items of self-esteem, social isolation or depressed mood. In terms of risk behavior outcomes, the two samples also did not differ significantly in frequency of disobeying parents, engaging in graffiti, drinking outside of school, or their self-reported number of violent altercations.

The Inclusion Sample did differ significantly from the Attrition Sample on a few key items. The longitudinal sample placed a higher value on attractiveness than did those who dropped out (Table 9). The Inclusion Sample also had a higher level of school attachment than the Attrition Sample. There were also differences in the risk behaviors of the two sub-samples. Those in the Attrition Sample were more likely to have brought alcohol to school, to have skipped school, or skipped classes, and to report using drugs outside of school (Table 10). These differences between the two sub-samples are not surprising. It should be expected that individuals who were less committed to school, skipping classes/days of school and who were engaging in drug and alcohol use both in

and out of school would be less likely to either still be in school, or be present on the days that data were collected.

Table 7

*Demographics (Categorical Items) of Attrition Between Waves 1 and 5 for the MSALT Sample*

Characteristics	Attrition Sample	Retention Sample	Chi-Squared
Total possible <u>N</u> (%)			
Parents' Report of Child's Ethnicity			
White	250 (90.6)	377 (96.2)	(1, <u>N</u> =668) = .05*
Black	17 (6.2)	8 (2.0)	
Other	9 (3.3)	7 (1.8)	
Parents Perception of Pubertal Timing			
Started Puberty	79 (38.5)	122 (42.2)	(1, <u>N</u> =494) = .41
Has Not Started	126 (61.5)	167 (57.8)	

\*  $p < .05$ . \*\*\*  $p < .001$

Table 8

*T-test Results Wave 1 and 5 Continuous Variables: Individuals in at Wave 1 and 5 vs. Attrition before Wave 5, with Mean, Standard Deviation, and N.*

Characteristics	Attrition Sample			Retention Sample			<u>t</u> (df)
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	
Mothers Education	3.95	1.52	280	3.93	1.38	393	-0.20 (671)
Parent's Value of Child's Attractiveness	4.61	1.43	206	4.81	1.49	297	1.53 (501)
Wave 1 Attachment to School	4.92	1.75	400	5.14	1.61	510	1.99 (908)*
Wave 2 Attachment to School	4.68	1.87	444	5.00	1.72	591	2.91 (1033)*
Wave 2 Value of Attractiveness	5.03	1.74	418	4.85	1.86	560	-1.60 (976)
Wave 2 Self-Concept of Attractiveness	4.97	1.40	416	4.83	1.53	559	-1.42 (973)

\*  $p < .05$ . \*\*\*  $p < .001$ .

Table 9

*T-test Results Wave 5 Demographic and Appearance Variables: Individuals in at Wave 5 and 6 vs. Attrition before Wave 6, with Mean, Standard Deviation, and N.*

Characteristics	Attrition Sample			Retention Sample			$t$ (df)
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	
Family Annual Income	3.79	1.07	219	3.72	1.05	322	-0.75 (539)
Mothers Education	3.77	1.08	258	3.75	1.10	374	0.85 (625)
School Attachment	4.11	1.85	264	4.68	1.54	381	4.22 (643)***
Feelings of Masculinity	2.35	1.22	217	2.23	1.09	349	-1.18 (564)
Self-Concept of Masculine Appearance	2.47	1.13	221	2.30	1.08	351	-1.87 (570)
Value of Masculine Activities	4.48	1.63	220	4.62	1.64	352	1.03 (570)
Self-Concept of Attractiveness	4.44	1.40	264	4.54	1.20	454	0.94 (644)
Value of Attractiveness	4.56	1.74	258	5.08	1.39	374	4.31 (630)***
Body Mass Index	21.96	3.17	245	22.01	3.29	361	0.18 (604)

\*  $p < .05$ . \*\*\*  $p < .001$ .

Table 10

*T-test Results Wave 5 Adjustment and Risk Behavior: Individuals in at Wave 5 and 6 vs. Attrition before Wave 6, with Mean, Standard Deviation, and N.*

Characteristics	Attrition Sample			Retention Sample			$t$ (df)
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	
Disobey Parents	3.41	1.95	221	3.14	1.80	355	-1.70 (574)
Push or Punch Another Student	2.56	1.79	221	2.39	1.57	356	-1.29 (575)
Created School Graffiti	2.31	1.83	220	2.36	1.83	354	0.32 (572)
Bring Alcohol to School	1.56	1.50	218	1.30	1.07	353	-2.34 (569)*
Use Alcohol Outside of School	2.74	2.05	216	2.48	1.78	352	-1.57 (566)
Use Drugs Outside of School	1.77	1.76	213	1.40	1.15	345	-3.01 (556)*
School Troubles	1.98	1.17	220	1.59	0.97	358	-4.28 (576)***
Self-Esteem	4.68	1.28	217	4.83	1.15	339	1.41 (554)
Depressed Mood	3.66	1.31	217	3.62	1.24	339	-0.28 (554)
Social Isolation	3.62	1.71	215	3.64	1.62	335	0.11 (548)

\*  $p < .05$ . \*\*\*  $p < .001$ .

## CHAPTER 4

### RESULTS

Analyses were conducted using the SPSS statistical package for windows (SPSS, 2007). The results for each hypothesis are presented individually. However, multiple analyses were run for each model presented in the hypotheses. Repeated measures ANOVA's were utilized to predict change over time in the outcome variables as a function of the categorical predictors and moderators. Repeated measures allow the researcher to control for unsystematic variability in the design, thus providing greater power to detect effects.

In all models, moderation of the relation between the outcome and predictor variable are proposed in the form of either value of appearing masculine or value of attractiveness. Baron and Kenny (1986) have suggested that moderation is easily tested using analysis of variance (ANOVA). Since the majority of the analyses in the current study are testing for both direct and moderated effects and/or change simultaneously categorical variables were created for all independent variables and entered in to an ANOVA. This created either a 3X2 or 4X2 categorical comparison and interaction testing for moderation. Creation of categorical variables allows the researcher to see if individuals differ from each other based on group levels. This allows for the assessment of individuals as similar or different based on mean differences in a predictor. Finally, many of the hypotheses in the current study also focused on issues of change in the independent variable. Given the 2 time points in the current study categorical variables

were created using level of change. That is individuals were grouped based on whether they increased, decreased or remained the same on a particular moderating variable.

In all analysis time specific ANOVA's were run at both Waves 5 and 6. These ANOVA's provide a descriptive look at the relationship between the predictors and outcomes at both ages. The second set of analysis described in each section utilizes repeated measures ANOVA's to address issues of change within person over time. Conducting the analyses in this manner allows for the establishment of the initial independent variables as predictors of change in the dependent variables over time. Graphical representation of the significant findings can be found in Appendix A.

*Hypothesis 1:* Self-concept of masculine appearance will predict self-concept of attractiveness. Individuals who think of themselves as more masculine in appearance will have higher self-concepts of attractiveness than individuals who do not think of themselves as masculine in appearance. This relationship will be moderated by the value that the individual places on masculine appearance. The strength of the link between self-concept of masculine appearance and self-concept of attractiveness will be stronger for those who highly value masculine appearance.

A 3 (self-concept of masculine appearance) X2 (value of appearing masculine) full factorial ANOVA was run with categorical variables for self-concept of masculine appearance and importance of appearing masculine predicting to self-concept of attractiveness at both waves to assess the predictors of self-concept of masculine appearance and importance of appearing masculine at specific time points. Additionally a 3X2 repeated measures ANOVA was run to assess change in self-concept of attractiveness over time as predicted by self-concept of masculine appearance and value

of appearing masculine. Tukey LSD post hoc analyses of difference were run on all categorical predictors containing 3 or more categories.

There were significant main effects at both Waves 5 and 6 for self-concept of masculine appearance as a predictor of self-concept of attractiveness [Wave 5  $F(2,563)=12.18, p<.05$ , Wave 6  $F(2,426)=2.97, p>.05$ ]. Participants who thought of themselves as highly masculine in appearance (Wave 5  $M=5.03$ , Wave 6  $M=4.81$ ) considered themselves to be more attractive than those who thought of themselves as moderately masculine in appearance (Wave 5  $M=4.44$ , Wave 6  $M=4.53$ ) and those who thought of themselves as lower in masculine in appearance (Wave 5  $M=4.27$ , Wave 6  $M=4.36$ ). Tukey post hoc analysis at Wave 5 indicate that individuals who had a high self-concept of masculine appearance differed significantly in how attractive they thought they were compared to those who had a moderate self-concept of masculine appearance and those who have a low self-concept of masculine appearance. Similar post hoc analysis on the data at Wave 6 indicates that individuals with a high self-concept of masculine appearance had significantly higher self-concept of attractiveness than participants classed as having a low self-concept of masculine appearance. A significant main effect for the value of appearing masculine as a predictor of self-concept of attractiveness was also found [Wave 5  $F(1,563)=16.65, p<.05$ , Wave 6  $F(1,426)=8.98, p<.05$ ]. Individuals who highly valued appearing masculine (Wave 5  $M=4.78$ , Wave 6  $M=4.74$ ) at both waves thought of themselves as more attractive than those who did not place as high a value on appearing masculine (Wave 5  $M=4.34$ , Wave 6  $M=4.38$ ).

This result also held true for the interaction of value of appearing masculine by time as predictors of change in self-concept of masculine appearance  $F(1,3.84)=6.59$ ,  $p<.05$ . Individuals who placed less value on appearing masculine started lower and increased slightly over time in their self-concept of attractiveness. In contrast, individuals who more highly valued appearing masculine decreased in their self-concept of attractiveness from Wave 5 to Wave 6. There was also an effect approaching significance for the interaction of value of appearing masculine, self-concept of masculine appearance and time as predicting to change in self-concept of attractiveness within person  $F(2,341)=2.61$ ,  $p>.05$ . However, the interaction between self-concept of masculine appearance and importance of appearing masculine within wave were non-significant at both waves in predicting self-concept of appearance [Wave 5  $F(2,563)=1.25$ ,  $p>.05$ , Wave 6  $F(2,426)=1.37$ ,  $p>.05$ ]. The interaction of importance of appearing masculine (Table 10) by time indicates that individuals who highly valued appearing masculine at Wave 5 decrease in self-concept of attractiveness over time as compared to individuals who placed less value on appearing masculine who slightly increased in self-concept of attractiveness over time. Results of the interaction approaching significance of self-concept of masculine appearance with value of appearing masculine over time are presented in Table 11. Individuals who placed a higher value on appearing masculine all declined in their self-concept of attractiveness over time no matter how masculine they rated their appearance at wave 5. In contrast individuals who placed less value on appearing masculine increased in self-concept of attractiveness if they had low or high self-concepts of masculine appearance at wave 5, while individuals who placed less value

on masculine appearance and rated themselves as moderately high in self-concept of masculine appearance decreased in self-concept of attractiveness.

Table 10

*Means of Self-Concept of Attractiveness by Value of Appearing Masculine Over Time*

Time Means	Level of Value of Appearing Masculine	
	Hi <i>n</i> =192	Low <i>n</i> =155
Wave 5	4.77	4.39
Wave 6	4.54	4.48

Table 11

*Means of Self-Concept of Attractiveness predicted by Self-concept of Masculine Appearance and value of Appearing Masculine Over Time.*

Time	Value of Appearing Masculine Wave 5	Self-Concept of Masculine Appearance Wave 5		
		Low <i>n</i> =70 <i>n</i> =61	Mid <i>n</i> =53 <i>n</i> =77	High <i>n</i> =32 <i>n</i> =54
Wave 5	Low	3.97	4.36	4.84
	High	4.52	4.60	5.19
Wave 6	Low	4.26	4.26	4.91
	High	4.23	4.53	4.87

*Hypothesis 1A:* If self-concept of masculine appearance increases or decreases over time, then self-concept of attractiveness should rise or fall in relation. This relationship will be moderated by the value placed on masculine appearance. As masculine appearance decreases over time we should expect individuals who highly value masculine appearance to show a decrease in self-concept of attractiveness, and individuals who highly value masculinity and show increases in masculine appearance over time should feel more attractive. For individuals who do not highly value masculine appearance these changes should have less of an impact.

A 3 (change in self concept of masculine appearance) X 2 (Value of appearing masculine) repeated measures ANOVA was run to test this hypothesis. As with the previous hypothesis, value of appearing masculine was a significant predictor of change in self-concept of attractiveness  $F(1,234)=2.71, p<.05$  (Table 10). Participants who placed a higher value on appearing masculine decreased in their self-concept of attractiveness over time while individuals who placed less value on appearing masculine increased in self-concept of attractiveness between waves of data collection. Change in self-concept of masculine appearance did not predict change in self-concept of attractiveness over time  $F(2,234)=1.37, p>.05$ . The interaction of change in self-concept of masculine appearance by value of appearing masculine was not a significant predictor of change in self-concept of attractiveness  $F(2,234)=0.07, p>.05$ .

*Hypothesis 2:* BMI will predict self-concept of attractiveness. Men with mid range BMI will think of themselves as more attractive than individuals with either high or low BMI. This relationship between BMI and self-concept of attractiveness will be moderated by the value of masculine appearance. Individuals who highly value masculine appearance will think of themselves as more attractive if they are either mid or high in BMI than individuals who have low BMI and value masculine appearance, or individuals who have normal or high BMI and do not highly value masculine appearance. (Figure 2)

At each wave, both BMI and value of masculine appearance were entered into a 4 (BMI) X 2 (value of appearing masculine) ANOVA with self-concept of attractiveness as the dependent variable to establish concurrent predictive validity. Additionally a 4 (BMI) X 2 (value of appearing masculine) repeated measures ANOVA was run to assess change in self-concept of attractiveness over time. At Wave 5 main effects were found for both BMI  $F(3,542)=5.75, p<.05$  and value of appearing masculine  $F(1,542)=18.3, p<.05$ . There was no significant predictive value though for the interaction of BMI and the value of appearing masculine on the outcome variable of self-concept of attractiveness at Wave 5  $F(3,542)=1.77, p>.05$ . As with Hypothesis 1, individuals who highly valued appearing masculine thought of themselves as more attractive ( $M=4.61$ ) than participants who did not highly value appearing masculine ( $M=3.75$ ). The relationship between BMI and self-concept of attractiveness is more complex. Results from the ANOVA and Tukey post hoc tests indicate that BMI at Wave 5 is a significant predictor of self-concept of attractiveness. The results do not entirely support the current hypothesis (Table 12). Individuals who are of normal BMI had a significantly higher self-concept of attractiveness than did either individuals who were classified as overweight or individuals who were classified as obese by the BMI. However, individuals who are classified as underweight do not differ significantly from participants in the other three BMI categories on self-concept of attractiveness.

Results for the ANOVA conducted at Wave 6 indicate that BMI is not a significant predictor of self-concept of attractiveness at this later time point

Table 12

*Means of Self-Concept of Attractiveness by BMI at Wave 5*

	BMI Groups			
	Underweigh t <i>n</i> =46	Normal <i>n</i> =409	Overweight <i>n</i> =73	Highly Overweight <i>n</i> =15
Self-Concept of Attractiveness	4.31 <sub>a</sub>	4.60 <sub>b,c</sub>	4.15 <sub>a,c</sub>	3.67 <sub>a,b</sub>

*Note:* Means in the same row that do not share subscripts differ at the  $p < .05$  in Tukey HSD

$F(3,378)=1.46, p > .05$ . The value of appearing masculine did again significantly predict self-concept of attractiveness  $F(1,378)=5.16, p < .05$ . As with Hypothesis 1, individuals who highly value appearing masculine rated themselves as more attractive than those who did not highly value appearing masculine (Table 13). The interaction of BMI and value of appearing masculine did significantly predict self-concept of attractiveness  $F(3,378)=2.90, p < .05$ . However, the results only partially supported the current hypothesis. As predicted, individuals who highly valued appearing masculine and who were either classified as normal or heavy did consider themselves more attractive than those who did not highly value appearing masculine and were of normal weight or who are classed as heavy according to the BMI. Additional support for this hypothesis is

found in the fact that individuals who are classed as underweight considered themselves more attractive if they did not highly value appearing masculine than if they highly

Table 13

*Means of Self Concept of Attractiveness by BMI group and Value of Appearing Masculine at Wave 5*

Value of Appearing Masculine	BMI Group Level			
	Underweight <i>n</i> =10 <i>n</i> =3	Normal <i>n</i> =135 <i>n</i> =146	Overweight <i>n</i> =37 <i>n</i> =38	Heavy <i>n</i> =6 <i>n</i> =4
Low	5.30	4.36	4.24	2.83
High	4.67	4.82	4.58	5.25

Table 14

*Means of Self-Concept of Attractiveness by Value of Appearing Masculine Over Time*

Time Means	Level of Value of Appearing Masculine	
	Hi <i>n</i> =187	Low <i>n</i> =148
Wave 5	4.79	3.68
Wave 6	4.42	4.03

valued appearing masculine. Contrary to the predicted effects though, individuals who were classified as severely overweight by the BMI considered themselves more attractive

if they highly valued appearing masculine compared to those who did not highly value appearing masculine.

The repeated measures ANOVA indicates that while BMI level at Wave 5  $F(3,327)=1.24, p<.05$  and the interaction of BMI group by value of appearing masculine at Wave 5  $F(3,327)=1.95, p<.05$  are not significant predictors of change in self-concept of attractiveness. Value of appearing masculine is predictive of change in self-concept of attractiveness  $F(1,327)=10.31, p<.05$ . As with Hypothesis 1 individuals who highly valued appearing masculine decreased in self-concept of attractiveness over time (Table 14), while individuals who placed less value on appearing attractive increased in self-concept of attractiveness over time.

*Hypothesis 3:* Self-concept of attractiveness will predict psychological adjustment, including self-esteem, depressed mood, and social isolation. Individuals who think of themselves as less attractive will have lower self-esteem, and higher levels of social isolation and depressed mood. This relationship will be moderated by the value placed on attractiveness. Having a low self-concept of attractiveness will be particularly problematic for individuals who highly value being attractive.

*Self-Esteem:* 3 (self-concept of attractiveness) X 2 (value of attractiveness) ANOVA's were run with self-concept of attractiveness, value of attractiveness, and self-concept of attractiveness X value of attractiveness entered as predictors of self-esteem to predict concurrent values. Additionally a 3 (self-concept of attractiveness) X 2 (value of attractiveness) X time repeated measures ANOVA was run with the independent variables predicting to change in self-esteem. As expected, self-esteem at both waves was predicted by the participants' self-concept of attractiveness. Post hoc analysis reveal that at both Waves 5  $F(2,538)=24.94, p<.05$  and 6  $F(2,463)=9.63, p<.05$  individuals with a higher self-concept of attractiveness had significantly higher self-esteem (Wave 5

$M=5.31$ , Wave 6  $M=5.44$ ) than did those who had a lower self-concept of attractiveness (Wave 5  $M=4.44$ , Wave 6  $M=4.85$ ). Additionally, at Wave 5 those individuals who rated themselves as moderately attractive ( $M=5.08$ ) were significantly higher on their self-esteem scores than those who thought of themselves as less attractive. At Wave 6, participants who rated themselves as highly attractive had higher self-esteem than did individuals who rated themselves as less attractive, while the participants with moderate ratings of self-concept of attractiveness did not differ statistically from either the high or low self-concept of attractiveness groups on self-esteem.

Value of attractiveness did not significantly predict self-esteem at Wave 5  $F(1,538)=0.00$ ,  $p>.05$ , nor, as hypothesized, did the interaction of self-concept of attractiveness and value of attractiveness predict significant differences in the outcome variable of self-esteem  $F(1,538)=1.30$ ,  $p>.05$ . There was a significant direct main effect for of value of attractiveness on self-esteem at Wave 6  $F(2,463)=4.47$ ,  $p<.05$ . Individuals who placed less value being attractive had higher self-esteem ( $M=5.12$ ) than did those who highly valued being attractive ( $M=4.88$ ). However, there was no significant interaction of self-concept of attractiveness and value of attractiveness in predicting self-esteem at Wave 6  $F(2,463)=1.15$ ,  $p>.05$ .

The repeated measures ANOVA for self-esteem over time as predicted by self-concept of attractiveness, value of attractiveness and the interaction of self-concept by value at Wave 5 revealed significant results only for self-concept of attractiveness as a predictor of self-esteem as it interacts with time. Individuals with a lower self-concept of attractiveness had lower mean levels of self-esteem and increased in self-esteem between

Waves 5 and 6, whereas the other 2 groups started higher in self-esteem and decreased over time  $F(2,313)=7.29, p<.05$  (Table 15).

*Depressed Mood:* For descriptive purposes a 3 (self-concept of attractiveness) X 2 (value of attractiveness) ANOVA was run at both Waves 5 and 6 with self-concept of attractiveness and value of attractiveness entered as predictors of level of depressed mood. A predictive 3 (self-concept of attractiveness) X 2 (value of attractiveness) X time ANOVA was run with self-concept of attractiveness, value of attractiveness, and the interaction of both predictors by time. Similar to self-esteem, depressed mood was significantly predicted by self-concept of attractiveness at both Wave 5  $F(2,543)=3.10, p<.05$  and Wave 6  $F(2,464)=6.49, p<.05$ . As predicted post hoc analysis revealed that individuals with lower self-concepts of attractiveness at Wave 5 and Wave 6 reported significantly higher levels of depressed mood (Wave 5  $M=3.71$ , Wave 6  $M=3.23$ ) than did those with a higher self-concept of attractiveness at Wave 5 and Wave 6 (Wave 5  $M=3.42$ , Wave 6  $M=2.76$ ). The predictor value of attractiveness produced a significant main effect at Wave 6  $F(1,464)=5.75, p<.05$ , but not at Wave 5  $F(1,543)=2.09, p>.05$ . At Wave 6 participants who placed more value on attractiveness ( $M=3.26$ ) reported higher levels of depressed mood than did individuals who placed less value on attractiveness ( $M=2.97$ ).

The 3X2 repeated measures ANOVA for predictive analysis revealed an interaction of self-concept of attractiveness at Wave 5 by time predicting to change in depressed mood  $F(2,319)=4.09, p<.05$ . Participants who reported high self-concept of attractiveness did not change significantly over time in depressed mood, while

individuals who had moderate or low self-concepts of attractiveness started higher and declined in their levels of depressed mood over time (Table 16).

Table 15

*Means of Self-Esteem by Self-Concept of Attractiveness Over Time*

Self-Esteem by Time	Level of Self-Concept of Attractiveness		
	Hi <i>n</i> =62	Mid <i>n</i> =92	Low <i>n</i> =165
Wave 5	5.31 <sub>a,b</sub>	5.21 <sub>a,b</sub>	4.44 <sub>c</sub>
Wave 6	5.20 <sub>a,b</sub>	5.13 <sub>a,b</sub>	4.89 <sub>c</sub>

*Note:* Means in the same row that do not share subscripts differ at the  $p < .05$  in Tukey HSD

*Social Isolation:* The final outcome in this hypothesis is social isolation as predicted by self-concept of attractiveness, value of attractiveness and the interaction of self-concept of attractiveness and value of attractiveness. Descriptive concurrent 3 (self-concept of attractiveness) X 2 (value of attractiveness) ANOVA's were run at Wave 5 and 6, along with a 3 (self-concept of attractiveness) X 2 (value of attractiveness) X time repeated measures ANOVA predicting change in social isolation. The value placed on appearing attractive to others at Wave 5 significantly predicted reports of social isolation  $F(1,551)=7.41, p < .05$ . Individuals who reported placing lower value on appearing

Table 16

*Means of Depressed Mood by Self-Concept of Attractiveness Over Time*

Depressed Mood by Time	Level of Self-Concept of Attractiveness		
	Hi <i>n</i> =62	Mid <i>n</i> =95	Low <i>n</i> =168
Wave 5	3.26	3.66	3.74
Wave 6	3.28	3.14	3.26

attractive to others reported less social isolation ( $M=3.88$ ) than did those who placed more value on appearing attractive ( $M=3.48$ ) at Wave 5. Value of attractiveness also predicted differences in social isolation  $F(1,465)=7.36, p<.05$  at Wave 6. As with the Wave 5 data, individuals who highly valued appearing attractive reported higher levels of social isolation ( $M=3.38$ ) than did those who did not value attractiveness as highly ( $M=3.04$ ). The variable self-concept of attractiveness did uniquely predict to the outcome variable of social isolation at Wave 6  $F(2,465)=9.36, p<.05$ . Individuals with a high self-concept of attractiveness reported less social isolation ( $M=2.67$ ) than those that reported moderate ( $M=3.13$ ) or low self-concepts of attractiveness ( $M=3.40$ ). Post hoc analysis revealed that all three groups differed significantly from each other in their mean levels of social isolation. The repeated measures ANOVA yielded no significant results for the predictors over time on the outcome of social isolation.

*Hypothesis 3A:* If self-concept of attractiveness increases over time, then depression and social isolation should decrease for individuals who highly value looking good while self-esteem should increase. Similarly, individuals who feel they are less attractive over time, and who highly value attractiveness should show increases in depression and social isolation, and decreases in self-esteem.

To test this hypothesis a full factorial 3 (change in self-concept of attractiveness) X 2 (value of attractiveness) repeated measures ANOVA was run to address issues of change in the dependent variables over time as predicted by level of change in self-concept of attractiveness, value of attractiveness at Wave 5 and the interaction of change in self-concept of attractiveness with value of attractiveness at wave 5.

*Self-Esteem:* Change in self-concept of attractiveness did significantly predict to change in self-esteem over time in the predicted fashion  $F(2,297)=11.18, p<.05$ . As can be seen in Table 17, individuals who increased or remained stable in their self-concept of attractiveness had lower initial self-esteem and increased in mean level self-esteem overtime, while males who decreased in self-concept of attractiveness between Wave 5 and Wave 6 had higher initial levels of self-esteem and decreased in self-esteem over time.

*Depressed Mood:* The repeated measures ANOVA revealed no significant predictive results for depressed mood as predicted by change in self-concept of attractiveness or value of attractiveness at Wave 5.

*Social Isolation:* There were both significant and near significant main effects in the expected direction for social isolation as predicted by change in self-concept of attractiveness  $F(2,307)=2.69, p<.10$  and the value of attractiveness at Wave 5  $F(1,307)=8.83, p<.05$ , while the interaction of these two predictors was not significant in

the predicted direction. There was a consistent trend in that social isolation decreased over time for the entire sample, however, the near significant effect for change in self-concept of attractiveness (Table 18) replicated the predicted results. Individuals who increased in self-concept of attractiveness between waves had higher initial reports of social isolation and decreased more than the other two groups over time. Further, as can be seen in Table 19, participants who highly valued attractiveness at Wave 5 reported higher mean levels of social isolation at Wave 5 and decreased more in social isolation over time.

Table 17

*Means of Self-Esteem by Change in Self-Concept of Attractiveness Over Time*

Self-Esteem by Time	Change in Self-Concept of Attractiveness		
	Decreased <i>n</i> =84	Stable <i>n</i> =127	Increased <i>n</i> =92
Wave 5	5.04	4.88	4.63
Wave 6	4.70	5.19	5.12

Table 18

*Means of Social Isolation by Change in Self-Concept of Attractiveness Over Time*

Social Isolation by Time Means	Change in Self-Concept of Attractiveness		
	Decreased <i>n</i> =95	Stable <i>n</i> =128	Increased <i>n</i> =90
Wave 5	3.72	3.48	3.82
Wave 6	3.36	3.23	3.20

Table 19

*Means of Social Isolation by Value of Appearing Masculine Over Time*

Social Isolation by Time Means	Level of Value of Attractiveness	
	Hi <i>n</i> =126	Low <i>n</i> =187
Wave 5	4.01	3.41
Wave 6	3.33	3.22

*Hypothesis 4:* Self-concept of attractiveness will predict risk behaviors such as substance use, violent behavior, truancy property damage and thrill seeking. Individuals who think

of themselves as less attractive will be more likely to engage in substance use and acting out behaviors. This relationship will be moderated by the value placed on attractiveness. Having a low self-concept of attractiveness will be particularly problematic for those individuals who highly value attractiveness.

Concurrent descriptive 3 (self-concept of attractiveness) X 2 (Value of attractiveness) full factorial ANOVA's were run for all risk behavior outcomes at Waves 5 and 6. Additionally a full factorial repeated measures ANOVA was run measuring change in the risk behaviors as predicted by self-concept of attractiveness at Wave 5, value of attractiveness at Wave 5.

*School Trouble:* Missing school was predicted at Wave 5 by self-concept of attractiveness  $F(2,575)=9.31, p<.05$ . Post hoc analysis indicate that individuals who rated themselves as more attractive were significantly more likely to miss school ( $M=2.15$ ) than those who thought of themselves as moderately attractive ( $M=1.70$ ) or those who thought of themselves as less attractive ( $M=1.63$ ). Individuals in the moderate and lower level groups for self-concept of attractiveness did not differ from each other significantly. At Wave 5 value of attractiveness  $F(1,575)=0.31, p>.05$  and the interaction of value of attractiveness and self-concept of attractiveness  $F(2,575)=1.07, p>.05$  did not significantly predict getting into trouble at school as measured by skipping a class or a day of school. Self-concept of attractiveness  $F(2,340)=1.17, p>.05$  and value of attractiveness  $F(1,340)=0.02, p>.05$  did not significantly predict skipping school at Wave 6, nor did the interaction of self-concept of attractiveness and value of attractiveness  $F(2,340)=0.39, p>.05$ . There were no significant results for change over time in skipping school behaviors as predicted by self-concept of attractiveness at Wave 5  $F(2,208)=.981, p>.05$  or value of attractiveness at Wave 5  $F(1,208)=1.46, p>.05$ .

*Disobeying Parents:* The risk behavior of disobeying parents was assessed at both Wave 5 and Wave 6 of data collection. Self-concept of attractiveness approached significance in predicting the frequency of disobeying parents at Wave 5  $F(2,574)=2.32, p<0.10$ . Individuals who thought of themselves as better looking were more likely to disobey their parents ( $M=3.64$ ) than were individuals who had moderate ( $M=3.31$ ) or low self-concepts of attractiveness ( $M=3.06$ ). The value placed on attractiveness at Wave 5 did significantly predict the how often respondents disobeyed their parents  $F=(1,574)=5.51, p<.05$  and at Wave 6  $F=(1,344)=20.97, p<.05$ . Individuals who highly valued attractiveness reported disobeying their parents more frequently (Wave 5  $M=3.57$ , Wave 6  $M=3.30$ ) than did those who placed less value on attractiveness (Wave 5  $M=3.05$ , Wave 6  $M=2.72$ ). There were no significant results for change overtime in disobeying parents as predicted by the Wave 5 level of self-concept of attractiveness  $F(2,208)=1.56, p>.05$ , value of attractiveness at Wave 5  $F(1,208)=0.41, p>.05$ , or the interaction of value of attractiveness with self-concept of attractiveness  $F(2,208)=2.82, p>.05$ .

*Aggression:* At Wave 5, self-concept of attractiveness was a significant predictor of violent behavior  $F=(2,575)=5.84, p<0.005$ . Contrary to the hypothesis though, males who had low self-concepts of attractiveness were less likely to engage in aggressive behaviors ( $M=2.24$ ) than either those with moderate ( $M=2.53$ ) or high self-concepts of attractiveness ( $M=3.02$ ). Of note is the fact that males with moderate or high self-concepts of attractiveness did not differ from each other in the extent to which they engaged in aggressive behaviors. At Wave 6 aggression was not significantly related to self-concept of attractiveness  $F(2,342)=1.52, p>.05$ , value of attractiveness

$F(1,342)=0.48, p>.05$ , or the interaction of self-concept of attractiveness with value of attractiveness  $F(2,342)=0.13, p>.05$  as was predicted. The interaction of self-concept of attractiveness with the value of attractiveness was not a significant predictor of aggression at Wave 5 in the predicted fashion. Finally, though the value one placed on appearing attractive was not significant at the .05 level, it did approach significance  $F(1,575)=2.77, p<0.10$ . Individuals who highly value attractiveness were more likely to report engaging in aggressive behaviors ( $M=2.75$ ) than those who placed a lower value on appearing attractive ( $M=2.30$ ). Change in violent behaviors overtime was not significantly related to self-concept of attractiveness  $F(2,209)=1.18, p>.05$ , value of attractiveness  $F(1,209)=2.66, p>.05$  or the interaction of the self-concept with value  $F(2,209)=0.15, p>.05$ .

*Alcohol and Drug Use:* The support for the current hypothesis with regards to alcohol and drug related variables is minimal. There were no main effects for self-concept of attractiveness [Wave 5  $F(2,569)=0.06, p>.05$ , Wave 6  $F(2,409)=0.31, p>.05$ ], value of attractiveness [Wave 5  $F(1,569)=0.01, p>.05$ , Wave 6  $F(1,409)=0.19, p>.05$ ], or the interaction of self-concept of attractiveness with value of attractiveness in predicting whether subjects brought alcohol to school in the last six months at either Wave 5 or 6 [Wave 5  $F(2,569)=0.92, p>.05$ , Wave 6  $F(2,409)=0.95, p>.05$ . These findings were replicated with predicting frequency of alcohol use in the last 6 months. Self-concept of attractiveness  $F(2,339)=0.62, p>.05$ , value of attractiveness  $F(1,339)=0.001, p>.05$  and the interaction of self-concept of attractiveness and value of attractiveness  $F(2,339)=1.40, p>.05$  were all non-significant as predictors of frequency of alcohol use at Wave 6.

Likewise, self-concept of attractiveness  $F(2,566)=1.08, p>.05$  and the interaction of self-concept of attractiveness with value of attractiveness  $F(2,566)=1.12, p>.05$  did not significantly predict frequency of drinking at Wave 5. In contrast the value males placed on appearing attractive at Wave 5 did have a significant relationship with frequency of drinking at Wave 5  $F(1,566)=3.97, p<.05$ . Males who highly valued looking good drank more often ( $M=2.85$ ) than those who did not value attractiveness as highly ( $M=2.43$ ). There were no significant results for change in frequency of bringing alcohol to school or drinking in the last 6 months over time as predicted by self-concept of attractiveness at Wave 5, value of attractiveness at Wave 5 or the interaction of these two items as had been predicted.

*Hypothesis 4A:* As self-concept of attractiveness increases over time, then substance use and risk behaviors should decrease for individuals who highly value looking good. Individuals who feel they are less attractive over time, and who value attractiveness should show increases in behaviors such as fighting, property damage, and substance use.

Full factorial 3 (change in self-concept of attractiveness) X 2 (value of attractiveness) repeated measures ANOVA's were run with the outcome variables of skipping school, disobeying parents, violent behaviors, bringing alcohol to school and drinking in the last 6 months. Limited support for this hypothesis was found. Changes in frequency of bringing alcohol to school or drinking in the last 6 months over time were not significantly predicted by change in self-concept of attractiveness  $F(2,269)=1.41, p>.05$ , value of attractiveness  $F(1,269)=0.30, p>.05$  or the interaction of change in self-concept of attractiveness with value of attractiveness  $F(2,269)=0.12, p>.05$ .

Change in skipping school was not significantly predicted by the interaction of change in self-concept of attractiveness with value of attractiveness  $F(2,202)=0.04$ ,  $p>.05$ . There was, however, a direct effect of change in skipping school behaviors over time as predicted by change in self-concept of attractiveness  $F=(2,202)=3.65$ ,  $p<.05$ . As can be seen in Table 20, all participants showed increases in the frequency of self-reports of skipping classes and school over time. Contrary to the predicted results of the current hypothesis, individuals who decreased in self-concept of attractiveness had the highest mean levels of skipping behaviors at Wave 5 and increased the least in these behaviors compared to individuals who increased or stayed stable in self-concept of attractiveness. These latter groups started lower in skipping behaviors and increased more in skipping behaviors over time.

Table 20

*Means of Skipping School by Change in Self-Concept of Attractiveness Over Time*

Skipping School by Time Means	Change in Self Concept of Attractiveness		
	Increased <i>n</i> =54	Stable <i>n</i> =96	Decreased <i>n</i> =58
Wave 5	1.48	1.47	1.75
Wave 6	2.77	2.52	2.44

The analysis of change in disobeying parents over time was not significantly predicted by either change in self-concept of attractiveness  $F(2,202)=0.32, p>.05$  or the value of attractiveness at Wave 5  $F(2,202)=1.32, p>.05$ . However, change in disobeying parents was significantly predicted by the interaction of time by self-concept of attractiveness by value of attractiveness  $F(2,202)=3.61, p<.05$ . There was an overall decrease in the frequency of disobeying parents over time; however, highly valuing appearing attractive was associated with higher mean levels of disobeying parents at both waves of data collection (Table 21). In particular, individuals who highly valued appearing attractive had the highest initial levels of disobeying parents at Wave 5 if they either increased or decreased in self-concept of attractiveness over time. Participants who highly valued attractiveness decreased more in the frequency of disobeying parents over time if they decreased in self-concept of attractiveness over time than individuals who increased in self-concept of attractiveness over time.

Table 21

*Means of Disobeying Parents by Change in Self-Concept of Attractiveness and Value of Attractiveness Over Time*

Time	Value of Attractiveness	Change in Self Concept of Attractiveness		
		Increased <i>n</i> =40 <i>n</i> =13	Stable <i>n</i> =68 <i>n</i> =31	Decreased <i>n</i> =25 <i>n</i> =31
Wave 5	Low	3.28	3.13	2.24
	High	3.62	3.23	3.74
Wave 6	Low	2.68	3.00	2.64
	High	3.46	3.10	2.65

Change in aggression as described by frequency of punching, hitting, pushing or kicking another student in the last six months was not significantly related to change in self-concept of attractiveness  $F(2,203)=0.33, p>.05$  or the interaction of change of self-concept of attractiveness with value of attractiveness over time  $F(2,203)=0.005, p>.05$ . The value placed on appearing attractive at Wave 5 did, however, have a unique main effect with regards to changes in violent behaviors  $F=(1,203)=4.93, p<.05$ . Again this behavior decreased over time for the sample as a whole, but individuals who highly valued appearing attractive engaged in more aggressive behaviors initially and decreased more over time than did those who placed lower value on appearing attractiveness (Table 22).

Table 22

*Means of Violent Behaviors by Value of Attractiveness Over Time*

Violent Behaviors by Time Means	Level of Value of Appearing Masculine	
	Hi <i>n</i> =75	Low <i>n</i> =134
Wave 5	2.76	2.19
Wave 6	1.53	1.47

### *Secondary Exploration of the Data*

The failure to reject the null in whole or in part in many of the analysis prompted secondary analysis of the hypotheses to understand the nature of the relationship between the variables. In an effort to understand the results that were found, and to eliminate possible third variable effects, several further ANOVA's were run for the time specific analysis using covariates. For each hypothesis relative pubertal timing, number of sports played, and number of school activities participated in were entered into the existing ANOVA's to test if these factors might alter the outcomes found for each set of analysis.

One plausible explanation for the failure of the interaction terms is that perhaps individuals who played more sports or were more involved in school activities, may have had higher self-concepts of attractiveness and masculine appearance, and might be less likely to change in self-concept of attractiveness. This argument was found to be plausible by Hunt (2002), who found that activity and sports participation moderated the link between self-concept of popularity, self-esteem, social isolation, and depressed mood. Further support for the idea of activity and sports status as a possible confound can be found in Barber et al. (2001), who found a link between sports and activity participation and behavioral outcomes such as drinking behaviors. Additionally, individuals who highly value appearing masculine to others or value appearing attractive to others may engage in more sports and school activities in an effort to reaffirm these perceptions in others.

Another possible explanation that was explored was that relative pubertal timing may have confounded the relation between self-concept of masculine appearance or BMI

and self-concept of attractiveness. Additionally, pubertal timing may have impacted the relationship between self-concept of attractiveness and both the psychological outcomes (self-esteem, depressed mood, social isolation) and the behavioral outcomes (skipping school, disobeying parents, alcohol related behaviors). The time males physically mature relative to their peers (Galambos, Kolaric, Sears, & Maggs, 1999) has been linked to higher self-esteem and popularity (Graber, Lewinsohn, Seeley, & Brooks-Gunn, 1997) than later maturing boys. Early maturing males are also found to be more likely to engage in negative behaviors such as drinking and truancy (Dick, Rose, Pulkkinen, & Kaprio, 2001; Duncan, Ritter, Dornbusch, Gross, & Carlsmith, 1985).

Another possible confound in the current analyses could have been related to the drop out and change of the make up of the sample over time. Given the longitudinal nature of the study drop out of participants is of concern. To account for this all of the ANOVA's for the Wave 5 specific analyses were rerun with only the individuals with complete data for the outcome at Wave 6 included. These analyses were conducted for two primary purposes. First, to assess if some of the variance between the results for Wave 5 and 6 were a function of power due to a reduced sample size, and second, to find out if the differences in the means of the individuals who dropped out prior to Wave 6 might have accounted for some of the differing results between waves.

#### *Hypothesis 1: Secondary Results*

Controlling for sports participation, school club participation, relative pubertal timing and attrition did not alter the relationship between self-concept of masculine appearance or value of appearing masculine to others. These findings support the

legitimacy of the original data reported. Controlling for these third variables does not change the relationship between self-concept of masculine appearance and self-concept of attractiveness, nor the relationship between value placed on appearing masculine to others and self-concept of attractiveness.

*Hypothesis 2: Secondary Results*

The relationship between BMI and self-concept of attractiveness was not changed when sports participation, club participation and relative pubertal timing. Indicating that individuals who played more sports, participated in more clubs or had earlier pubertal timing did not differ in the manner in which BMI and value of appearing masculine to others is related to self-concept of attractiveness. Controlling for attrition of subjects did yield significant differences from the original findings.

Using the Wave 6 outcomes to control for change in the sample resulted in two in significant results for 2 previously non-significant relationships at Wave 5. Previously, the ANOVA results from hypothesis 2 indicated that while the interaction of BMI and the value of appearing masculine had a significant main effect for predicting self-concept of attractiveness at Wave 6 but not at Wave 5. When drop out in the sample was accounted for at Wave 5, the interaction between BMI and value of appearing masculine was found to be significant  $F(3,327)=4.72, p<.05$ . In comparing these disparate results, it appears that individuals in the original sample who placed lower value on appearing masculine to others and scored either overweight ( $M=3.38$ ) or highly overweight ( $M=2.71$ ) rated themselves slightly higher on self-concept of attractiveness than did the same groups who had data at both waves ( $M=3.62, M=2.50$ ). Additionally, individuals who indicated they

placed a high value on appearing masculine and scored as highly overweight on the BMI rated themselves as less attractive ( $M=4.63$ ) in the original sample than did individuals who had data at both waves ( $M=5.25$ ). This is particularly interesting given the fact that these results are now significant despite the decreased sample size for the total sample ( $n=543$ ) versus the continuation sample ( $n=335$ ). To help understand these results, two full factorial ANOVA's were run with only those individuals who scored highly overweight on BMI at Wave 6 with value of attractiveness predicting to hours spent in both organized sports  $F(1,10)=16.90, p<.05$  and hours in other sports activities  $F(1,9)=8.167, p<.05$ . Individuals who score as highly overweight spent more time involved in organized sports ( $M=3.75$ ) and other sports activities ( $M=4.00$ ) if they highly valued appearing masculine than did individuals who placed less value on appearing masculine ( $M=1.17, 1.67$ ).

### *Hypothesis 3: Secondary Results*

The existing significant relationships between self-concept of attractiveness and value of appearing attractive to others as predictors of psychological adjustment did not change when sports and club participation, or relative pubertal timing were controlled for. However, there was a difference when attrition between wave 5 and 6 were controlled for. Similar to the findings on BMI, self-concept of attractiveness at Wave 5 did not significantly predict social isolation at Wave 5 but did predict at Wave 6 in the original analysis. When only individuals with complete data at both waves are included at Wave 5, self-concept of attractiveness does have a significant relationship with social isolation  $F(2,325)=4.36, p<.05$ . Individuals who had data at both waves, and who thought of

themselves as highly attractive, reported less social isolation ( $M=3.26$ ) than did the same group (Appendix A) for the total Wave 5 sample ( $M=3.26$ ). This seems to indicate that individuals who thought of themselves as highly attractive at Wave 5 but felt socially isolated were less likely to be in the study at Wave 6 than individuals who thought of themselves as highly attractive and who experienced less social isolation. In other words socially isolated highly attractive people were more likely to stop participating in the study than their non socially isolated counterparts.

*Hypothesis 4: Secondary Results*

Controlling for sports participation, club participation, relative pubertal timing and attrition did not yield significant differences from the original analysis. In particular, it was reasoned that sports participation, as mentioned earlier, might account for the relationship between drinking behaviors and value of appearing attractive to others. However, while athletes in the sample may drink more, when athletic participation is controlled for, the relationship between highly valuing being attractive to others and frequency of alcohol consumption at Wave 5 is still significant.

## CHAPTER 5

### DISCUSSION

#### *Overview*

This chapter begins with an overview of the main findings from the current study. After discussing the main findings, consideration is given to how the interaction of self-concept and value placed on others' opinions relate to both psychological and behavioral outcomes. Finally, alternative suggestions for failure to reject the null hypothesis are explored and future directions for further study of the relationship among self-concept, value and behavioral and psychological outcomes are explored.

The present study was undertaken in an effort to extend the broad knowledge about appearance and psychological outcomes in women, and to explore these links in males. As such, the current study had two primary objectives. The first objective was to examine self-concept of masculine appearance as a key predictor of self-concept of attractiveness for males. The second purpose was to address how self-concept of attractiveness and change in self-concept of attractiveness impacted both psychological and behavioral variables. It was argued in the current study that, from a symbolic interaction perspective, these links would be moderated by the extent to which individuals placed higher value on appearing masculine or attractive to others. The linkage from this perspective indicates that individuals who have a higher looking glass perspective (value of appearing masculine or attractive to others in the current study) are more likely to experience changes in self-evaluations when they encounter changing feedback from socially important sources (Harter, 1999). The current study found

support for many of the hypothesized links. While the current study failed to uncover significant support for some of the hypothesis either in full or in part (particularly in the realm of moderator relationships), some key findings are of interest.

Results in the current study in part support, and in part contradict the literature that guided the hypotheses. In particular, there was strong evidence in the current study that masculinity and the value of appearing masculine to others was significantly related to how attractive the participants considered themselves to be.

#### *Self-Concept and Value of Appearing Masculine as Predictors*

As stated, one of the primary purposes of the current study was to establish whether there was a link between males' self-concept of masculine appearance and their self-concept of attractiveness, with the further idea that this link would be moderated by the extent to which they valued appearing masculine to others. The link between body image and self-concept of attractiveness has been extensively explored in the literature on women, but is not as fully replicated in the literature on male self-concept of attractiveness (Haworth-Hoepfner, 2000; MacKinnon, Goldberg, Cheong, Elliot, & Moe, 2003; Trampe, Stapel, & Siero, 2007). The results from hypotheses 1 and 1a along with hypothesis 2 indicate that there is a relationship between thinking of oneself as attractive and thinking of oneself as masculine. In particular, individuals who thought of themselves as highly masculine had a higher self-concept of attractiveness, as expected. These results support the concept that males, like females, at least in part equate their level of physical attractiveness with fitting their gender specific physical archetype. Outsider ratings indicate that males who are mesomorphic in body type are thought to be

more attractive both by women and other males (Brown, Cash, & Noles, 2001). This relationship is replicated in the current study utilizing individual self-concept of both attractiveness and masculine appearance.

Further, when BMI is used as an objective measure of physical fitness and appearance, then from an objective standpoint, participants who fit the normal body size for males considered themselves more attractive as well. In comparison, individuals who would be classified as overweight on the BMI considered themselves less attractive; this could be linked to having a body shape that is outside the norm for their size and gender. As with the findings of Morrison et al., (2004), individuals who are in good physical condition for sports, or due to exercise, have lower BMI's than do less active males with the notable exception of football players. The relationship between BMI and attractiveness for males could be related to the functionality of their body. That is, the normal and lower BMI scores of individuals who had higher self-concepts of attractiveness could be related to them feeling good about their body shape and about their body as a functional masculine tool (Abbot & Barber, under review). The secondary data analysis may lend some support to this. Individuals who had complete data for both waves and who had the highest BMI scores thought of themselves as more attractive and valued appearing attractive more if they were athletes. The results confirm, though, that individuals who either think of themselves as masculine or who have normal objective body shapes consider themselves to be more attractive, and that high ratings of masculinity and attractiveness were correlated with high BMI scores for individuals who spent more time in sports.

However, of interest is the relationship between value of engaging in activities that make one appear masculine and self-concept of masculine appearance as predictors of self-concept of attractiveness. As predicted, at Wave 5 individuals who thought they were highly masculine in appearance and who placed a higher value on appearing masculine to others were higher in their self-concept of attractiveness. Contrary to the hypothesis, this result changed between Wave 5 and Wave 6. Individuals with high self-concepts of masculine appearance and high values placed on appearing masculine to others decreased in their self-concept of attractiveness over time. Several possible explanations exist for this result. First, since the participants who highly value appearing masculine to others start higher on self-concept of attractiveness and the low value group start lower this result could simply be a function of regression to the mean. Another possible explanation is that individuals who place high value on appearing masculine to others, and who think of themselves as appearing masculine, may have matured early physically in comparison to individuals who thought of themselves as less masculine in appearance. Follow-up data analysis with relative pubertal timing ruled this assertion out. A third possible explanation can be seen in both symbolic interactionism, and in the work on peer groups (Brown, 2004; Harter, 1999; Kinney, 1993). The argument made here is that the changing salience in peer groups may influence the feedback that higher other oriented individuals receive, and is explored next.

The main effect and the moderating effect of value of appearing masculine to others in the current study indicates that individuals who highly value engaging in activities that make them appear masculine to others decrease in their self-concept of

attractiveness over time. As discussed by Harter (1999), individuals who place higher emphasis on the opinions of others have less stable self-concepts. That is, as the feedback received from others changes, self-concept is more likely to change if higher value is placed on the opinions of others. In contrast, individuals with a low looking glass orientation are less susceptible to fluctuations in their self-concepts over time as a result of the feedback they receive from those around them. From a symbolic interaction standpoint then, it could be that individuals who highly value appearing masculine to others may have suffered challenges to their self-concept of masculine appearance, and thus experienced a decline in their self-concept of attractiveness. As of now, the current study does not lend itself to an analysis at the individual level of feedback received by participants on their appearance. From a post hoc standpoint though, at the group level, it could be that peer culture is playing a role in the effect of value of appearing masculine as it predicts to self-concept of attractiveness. If individuals who place a high value on appearing masculine to others are thought to have a high looking glass orientation, then the changes in peer crowds and cliques over time could offer one explanation of why their self-concept of attractiveness declined over time. Research on adolescent peer groups indicate that they are most salient and close knit at younger ages and that by the time students reach late high school the crowds have less salience (Brown, 2004; Kinney, 1993). It could be, then, that the high value group received more feedback from peers during Wave 5, and as this feedback declines over time with the decline in salience in peer groups, their high value status may have left them with a less stable self-concept of attractiveness that suffers as peer influence and feedback wanes.

*Attractiveness as a Predictor of Psychological Outcomes*

Research on self-esteem has indicated that self-esteem seems to drop in early adolescence and then increase slowly over time with stabilization occurring around the 10<sup>th</sup>-12<sup>th</sup> grades (Block & Robins, 1993; Cole, Maxwell, Martin, Peeke, Sercozynski, & Tram, 2001; Harter, 1997; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002). Further, Harter (1999) indicates that males have, in general, higher self-esteem when it is estimated in domain-specific tests. It is not surprising that all of the self-concept of attractiveness groups in the current study increased in self-esteem over time. What is of note though, is that individuals who thought they were less attractive at Wave 5 increased the most in self-esteem between Wave 5 and Wave 6. In the repeated measures evaluations of self-esteem, as predicted by self-concept of attractiveness and value of appearing attractive, it appears as though there was at least some regression to the mean on the self-esteem measure. Both the high self-concept and moderate self-concept of attractiveness groups started high in self-esteem and decreased slightly over time. However, the lower self-concept of attractiveness group started lower and showed an increase over time, but did not catch up to the level of self-esteem present in those who thought of themselves as moderately or highly attractive. From this, it appears that regression to the mean is not the sole reason for the differences between these groups. When change in self-concept of attractiveness is used as the predictor, as should be expected, individuals who increased or were stable in their self ratings of attractiveness increased in self-esteem between waves, while individuals who decreased in their self

ratings of attractiveness decreased in self-esteem over time. This indicates that, at least in part, self-concept of attractiveness plays a role in individuals' self-esteem over time.

These results were replicated in the predicted direction for social isolation. While all three groups decreased in their mean levels of social isolation over time, individuals who increased in their self-concept of attractiveness over time started higher in social isolation and decreased the most in social isolation. In contrast, the group of participants who decreased in their self-concept of attractiveness over time started lower in social isolation and decreased less in social isolation. Taken together these results seem to indicate that feeling attractive is associated with more positive psychological outcomes as was predicted. However, the question becomes one of why the less attractive males showed improvements over time in their mental health outcomes as measured by self-esteem, depressed mood, and social isolation. Again, social interaction theory may offer some explanation of these findings. Harter (1999) found that younger adolescents were more likely to have difficulties if their self-conceptions and looking glass orientations had differing or contradictory aspects. These difficulties faded over time. As individuals age and are able to recognize those internal traits that are part of their ideal self, they may become less prone to problems when facing opposing self-conceptions or environmental feedback. These results may be supported, at least tentatively, by the finding that value placed on appearing attractive to others was linked to social isolation in a manner contrary to the hypothesis. Individuals who highly valued appearing attractive to others at Wave 5 reported more social isolation than did individuals with a less looking glass oriented value of attractiveness. This seems to indicate that individuals who place less

value on the opinions of others may not feel as isolated from individuals on a consistent basis. This idea may be challenging though, because individuals who were more socially isolated and who placed high value on appearing attractive to others were more likely to drop out of the study prior to Wave 6.

#### *Attractiveness as a Predictor of Behavioral Problems*

Of the behavioral measures that were tested, self-concept of attractiveness and value of appearing attractive to others both had interesting main effects. In general, having a high self-concept of attractiveness was related to higher rates of behavioral issues including: skipping school, disobeying parents and engaging in aggressive acts against others. Additionally, while the interaction of value of appearing attractive to others and self-concept of attractiveness was not significant in most results, in the current study, highly valuing appearing attractive to others was related to higher rates of misbehavior as well. Over time though, the rates of most of the measured behaviors seem to normalize in the current sample. Again this could be a function of regression to the mean. Further, though there are statistically significant differences between groups in the current study, all of the self-reports of problem behaviors occurred below the mid point of the scales used (4-6 times in the past month). This means that while the groups differed, none of them were engaging in high rates of any of the behavioral measures.

Alternatively, this could again be a function of the greater emphasis placed on appearing attractive to others during the sophomore year, and the reduction of external influences over time for the subjects. That is to say, participants at Wave 5 may have been more influenced by the perceptions of their peers and what they perceived to be

appropriate behavior for individuals who are attractive, but as they aged they may have focused more on internal factors than they did earlier in high school. As discussed previously, adolescents may gradually shift from external evaluations to internal evaluations of self over time in forming their identity and self-concepts.

How then, can the behaviors at Wave 5 be explained as they relate to both self-concept of attractiveness and value of appearing attractive to others? Research on adolescent peer groups indicates that mid adolescence is the peak of peer influence especially for males (Erickson, Crosnoe, & Dornbusch, 2000). In particular, Erickson and colleagues (2000) found that susceptibility to peer pressure in males peaked around 14-16 for antisocial behaviors such as stealing and trespassing. Given these results, it could be that males in the current study who highly valued appearing attractive to others may have been more susceptible to peer influences regarding negative behaviors. Research has indicated that males who have a higher peer orientation are more likely to engage in negative behaviors (Brown, Clasen, & Eicher, 1986). Research has indicated that while peer pressure continues to increase through late adolescence, susceptibility to this pressure wanes with later age (Steinberg & Silverberg, 1986). This decline in the influence of peers on individual behavior could help to explain the decrease (overall) of the negative behaviors for the different groups of participants. As the males in the current study aged, the need to “act tough to look good” may have declined. This idea is mirrored in the previous discussion of the role of social interaction theory in explaining how individuals maintain a more stable and self oriented image as they age (Harter, 1999). In the current study this may be supported by the rates of disobeying parents.

Individuals who highly valued appearing attractive to others were more likely to disobey their parents, but if they decreased in self-concept of attractiveness, they declined more than if they increased in their self-evaluations. This may indicate that if boys highly value others' opinions, and think they are attractive, they may be more likely to engage in behaviors to help maintain the image of masculine behavior. Overall, it appears as if the salience of others' opinions may have as much or more influence over individual behaviors than does the one's own self-conceptions.

Another consideration in the current study, but one that is of interest by itself, is the nature of the change in individuals over time as it pertains to the attitudes and identity shifts in the participants due to the timing of the study between sophomore year and the end of the senior year in high school. As mentioned in the methods section the data in Wave 6 were collected during the spring of the participants' senior year in high school. As the participants readied for the transition from high school to what lay beyond, their answers and the data they provided may have varied from the data they might have given at the start of their senior year. One possible explanation for possible changes in the salience of others opinions that was not addressed earlier could be that the participants were readying for this transition out of the school domain and were consolidating and changing friendship ties. It could be that the changes in permeability of peer groups discussed by Brown (2004) are the result of changes in the identity and attitudes of individuals about to transition to a new status. Developmentally, the change from sophomore year to the senior year entails some understanding of the need to assume adult

roles that may have seemed less salient to the 16-year-old sophomores than to the 18-year-old seniors.

### *Limitations*

While the current study sought to expand understanding of how masculinity and attractiveness are related in adolescent males especially as related to psychological adjustment and behavioral problems, and the role of others opinions in these outcomes, there are some limitations in the current study. One of the first concerns has to do with the sample size. Since ANOVA's were used in the analysis, grouping of the subjects limited the cell size of the groups. As discussed by Cohen (1988), smaller sample sizes can result in type 2 errors where the limited sample size does not provide enough statistical power to reject the null hypothesis even when a difference may be present. In the more complex analyses where change in self-concept was considered at Wave 6, cell sizes were reduced to as few as 13 individuals, and one cell in the consideration of BMI consisted of only 3 cases. In part this limitation was related to the nature of the longitudinal design of the study. While every effort was made to maintain participation by subjects, subjects could opt out of the study. As can be seen in comparisons of the Wave 5 and Wave 6 data, there was an attrition of nearly 100 cases. These factors may have contributed to a reduction in the ability of the current study to reject the null especially in cases where the grouping of the individuals led to especially small cell sizes for the interaction of variables in the ANOVA.

Another limitation in the current study has to do with the measures used. MSALT is a large longitudinal study, and was not specifically created to test the hypotheses of the current study. In particular, single items were used to assess self-concept of attractiveness and masculinity variables. As such, the self-concept variables asked the participants general global feelings about their appearance and not domain specific questions. Research on attractiveness has indicated that factors such as body symmetry, facial composition, and body proportion and body functionality have been used in estimating our own or others subjective level of attractiveness (Abbott & Barber, under review; Brown, Cash, & Noles, Furman, & Baguma, 1994; 2001; Jones, Bain, & King, 2008; Marcus & Miller, 2003). Given this body of research, it may be that a larger number of items to assess individual's self-concept of masculinity and attractiveness may have led to a scalable score that may have allowed for better assessment of participant self-concepts. Further, the item regarding how masculine individuals felt they appeared was also very global in nature. The literature on steroid and weight lifting populations suggests that specific characteristics such as chest and arm size, jaw line, and overall muscle tone may be indicative of masculine body appearance (Bottamini & Ste-Marie, 2006; Hausenblaus et al., 2003; Wichstrom, 2001). Items relating to specific aspects of masculine appearance may have lent themselves to an increased ability to detect differences. For instance an individual may feel generally that they look very masculine to others, but be aware that their biceps or shoulder to waist ratio has changed in a manner that is especially positive or negative while not impacting their global feelings of masculine appearance that could be influenced by many other combined factors.

Similar to the concerns in the current study regarding the items used to assess the self-concept variables, the items used to address looking glass orientation in the form of value of appearing attractive or masculine to others were single item measures. The item “How important is it to you to engage in activities that make you appear masculine?” was used as the proxy for value of others opinions of the individual’s masculine appearance. It is important to note that majority of questions in this section of the survey were about the opinions of others, and so the subjects were primed to consider the question in reference to others’ opinions. The phrasing of this item may have lent itself to some of the findings on behavioral issues in the current study; especially if the participants believed the behaviors would make them appear more masculine to others. In particular, from an identity and symbolic interaction perspective, researchers are more likely to utilize multifaceted questions to assess a global level of looking glass orientation (Harter, 1991; Harter, 1999). Asking the participants if they thought it was important to them to appear masculine to others in multiple physical and behavioral categories may have allowed a better assessment of their overall feelings regarding the importance of others opinions about their appearance. Further, from a symbolic interaction perspective, it may have helped the current study had items regarding the perceived, ideal and looking glass self could have been included. Markus and Nurius (1987) indicate that individuals who have a wide gap between their perceived self and their ideal self may be more prone to face greater challenges to their self-concept.

Another possible limitation in the current study, but one that is of interest by itself is the nature of the change in individuals over time as it pertains to the timing of the

study between sophomore year and the end of the senior year in high school. As mentioned in the methods section the data in Wave 6 were collected during the spring of the participants' senior year in high school. As the participants readied for the transition from high school to what lay beyond, their answers and the data they provided may have varied from the data they might have given at the start of their senior year. One possible explanation for possible changes in the salience of others opinions that was not addressed earlier could be that the participants were readying for this transition out of the school domain and were consolidating and changing friendship ties. It could be that the changes in permeability of peer groups discussed by Brown (2004) are the result of changes in the of individuals about to transition to a new status. Developmentally, the change from sophomore year to the senior year entails some understanding of the need to assume adult roles that may have seemed less salient to the 16-year-old sophomores than to the 18-year-old seniors.

A final limitation of the current study concerns the nature of the data and the study itself. The current study does not allow for causal claims regarding the relationship between self-concept, value of others' opinions regarding appearance and the outcome variables. Because this study was not done in a controlled laboratory environment, and no variables were manipulated by the researcher (i.e. giving false feedback on the subjects level of masculine appearance, using an alternative mirror that may have changed their view of their body etc.) conclusions can only be made regarding the correlational nature of the relationship between the variables. The repeated measures used in the current study attempted to establish change via comparison of intra and inter

individual changes on the variables. However, to truly assess the level of change a more frequent time sampling would allow for addressing issues of whether the variables used were consistent trait-like quantities or if they were more variable in nature. Further, since this was not a controlled experimental design, the author is not able to completely rule out alternative explanations such as social desirability of participant responses or familiarity with the items after multiple exposures. However, even with these limitations, the current study does allow for an exploration of factors that are associated with masculinity, attractiveness, and their relationship to psychological and behavioral outcomes that is relatively unique in the literature on adolescent males.

Although the current study may have been limited by the fact that it is descriptive in nature, the longitudinal data did provide a benefit that a time specific or cross-sectional experimental design could not provide. The longitudinal nature of the MSALT study allowed the current study to address issues of change in the population measured. In particular, having data from multiple time points allowed the current study to look at both intra-individual change over time and inter-individual differences. The benefit of multiple time points is that it allowed the current study to look at how groups of similar individuals changed over time and to address these group differences as indicators of real change in the outcomes of interest. This aspect of growth and change over time would have been lacking had the current study not been a longitudinal study, and as such future work in the areas of self-concept and looking glass orientations may benefit from continued use of longitudinal data.

### *Future Directions*

Because the current study was conducted using existing data and measures, as mentioned previously, on a topic that has been relatively unexplored in the research on body image and attractiveness, there are many possibilities for future research. Alteration of the sampling technique, expansion of the variables used and refinement of the measures to better fit the symbolic interaction theory used in the current model could all lend themselves to more in depth explorations in the future.

With regard to sampling techniques, future research could take advantage of advances in online and internet data collection tools to allow for more frequent and individually targeted sampling. A particularly interesting question would be to include at least 2 data points from the senior year of high school to allow the research to address changes in peer orientation between the fall and spring of that year (Baltes& Nesselroade, 1972).. More frequent sampling might allow the researcher to establish if there are frequent fluctuations in self-concept that may alter outcomes based on how the subject is feeling that day. Additionally more frequent sampling would allow future research to address if self-concept regarding physical appearance becomes more differentiated and stabilizes over as participants transition through the high school years as has been suggested that other components of self-concept appear to do.

As mentioned, future research may benefit from refining the measures used to assess both self concept and value of others opinions. In order to more accurately test the relationship between environmental feedback and individual self-conceptions more explicit and domain specific question might allow for further explanation of the

relationship between self-concept of masculine appearance, value of appearing masculine and global self-concept of attractiveness. Further, more diverse questions might allow future research to explore particular components of self-concept that may lead to problematic psychological or behavioral outcomes. Given that global self-concept of attractiveness and change in self-conceptions did show limited relationships with both psychological and behavioral outcomes, future research may be able to further explore these links.

#### *Concluding Remarks*

The current study found many interesting relationships between variables. Overall it was found that the value placed on others' opinions impacts the self-concepts and psychology of men. Perhaps the most interesting finding of the current study involves the relationship between self-concept of masculine appearance, the value of appearing masculine to others and self-concept of attractiveness. The fact that both variables had main effects on the outcome is, in and of itself, interesting. Of primary interest is the unpredicted direction of the relationship between the value of appearing masculine to others and self concept of masculine appearance. The fact that individuals who highly valued appearing masculine to others decreased over time in their self-concept of masculine appearance needs further exploration. Is it, as suggested previously, that individuals who have a high looking glass orientation suffer as peer groups become less salient or are there other factors at work. Examining the role of self-concept and value of other opinions as predictors of individuals' self-conceptions of attractiveness is new territory in the study of attractiveness in male populations. If the link between the value

of others opinions and self-concept can be better explored in the future it may shed light on the mental representations carried by males who engage in extreme methods to change their bodily appearance such as weight lifting and steroid use.

APPENDIX A  
PRESENTATION FIGURES

Figure 5

Hypothesis 1: Self-Concept of Attractiveness as Predicted by Self-Concept of Masculine Appearance at Waves 5 & 6

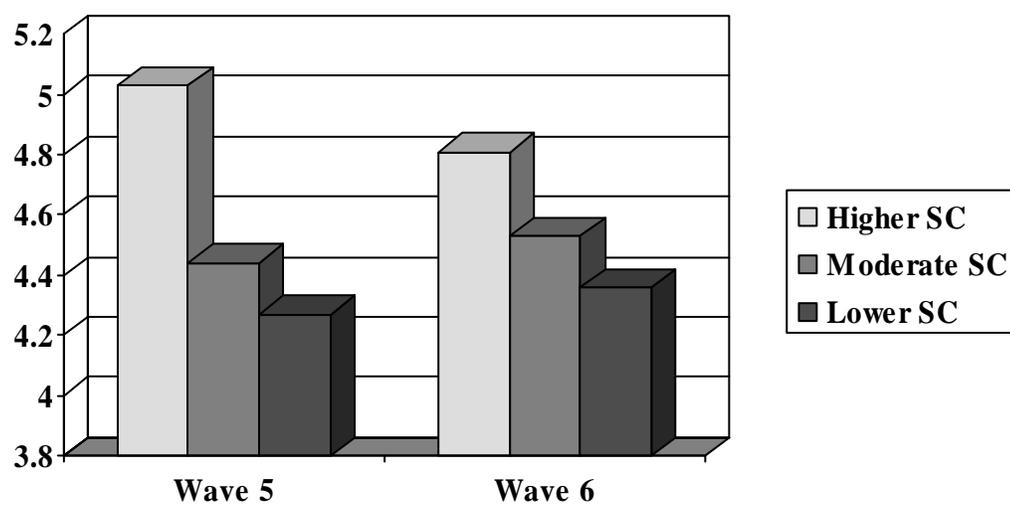


Figure 6

Hypothesis 1: Self-Concept of Attractiveness as Predicted by Value of Appearing Masculine at Waves 5 & 6

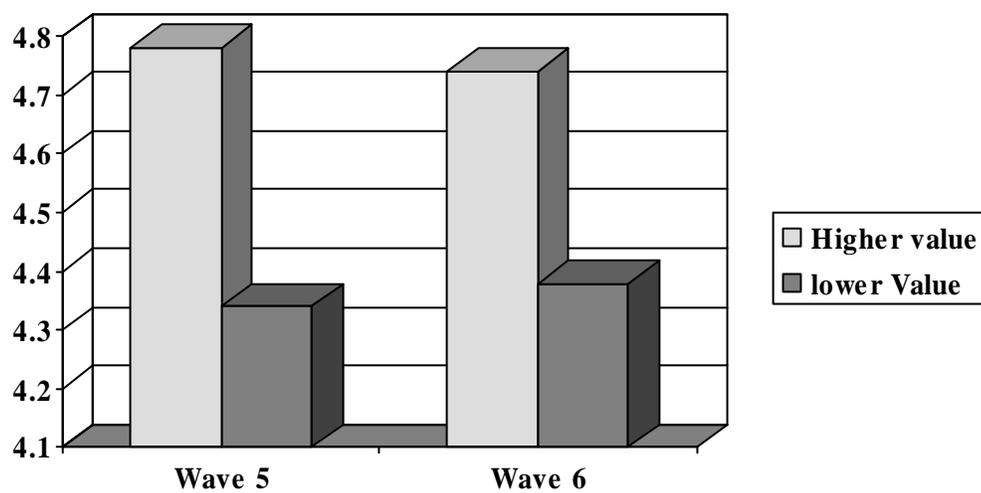


Figure 7

Hypothesis 1: Self Concept of Attractiveness as Predicted by Value of Appearing Masculine Over Time

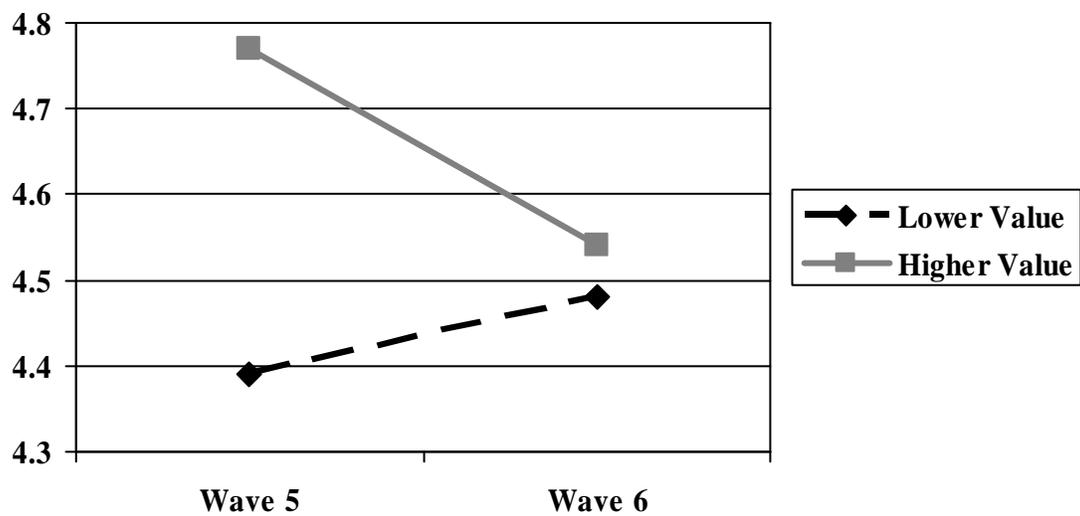


Figure 8

Hypothesis 1: Self Concept of Attractiveness as Predicted by Value of Appearing Masculine and Self-Concept of Masculine Appearance Over Time

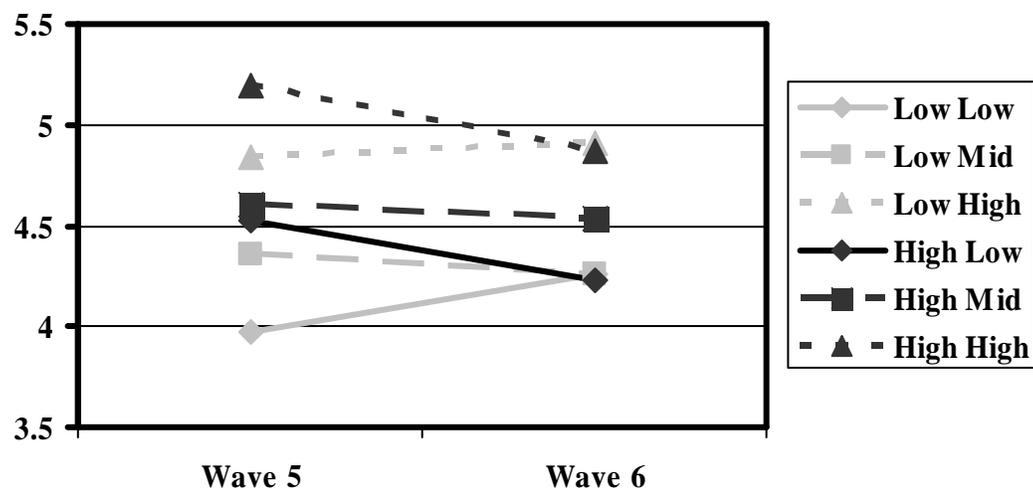


Figure 9

Hypothesis 2: Self-Concept of Attractiveness as Predicted by BMI at Wave 5

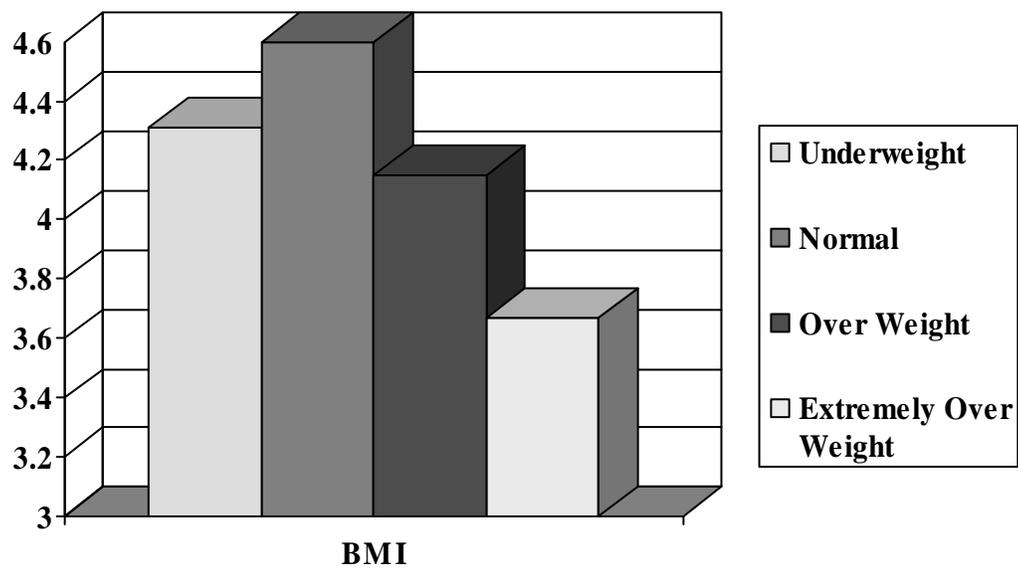


Figure 10

Hypothesis 2: Self-Concept of Attractiveness as Predicted by BMI and Value of Attractiveness at Wave 5

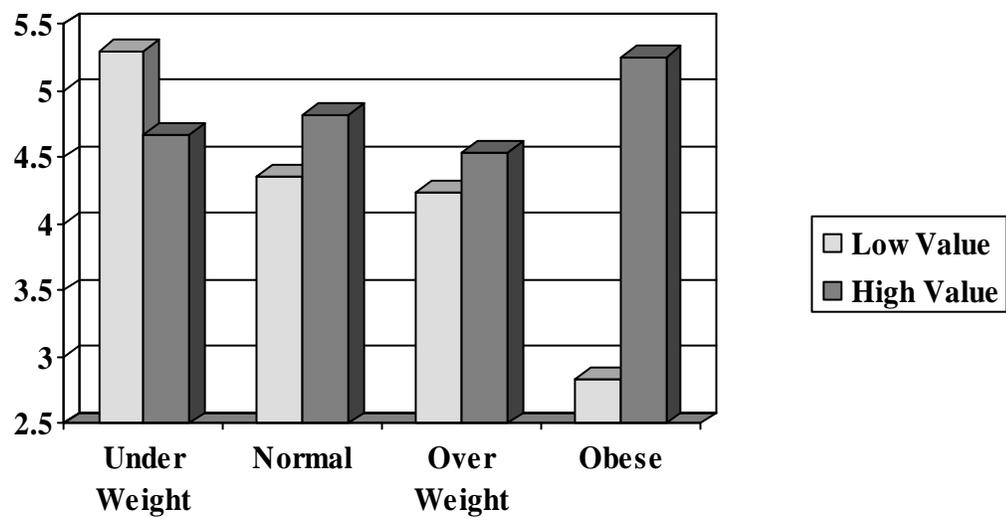


Figure 11

Hypothesis 3: Self-Esteem Predicted by Self-concept of Attractiveness at Wave 5 &amp; 6

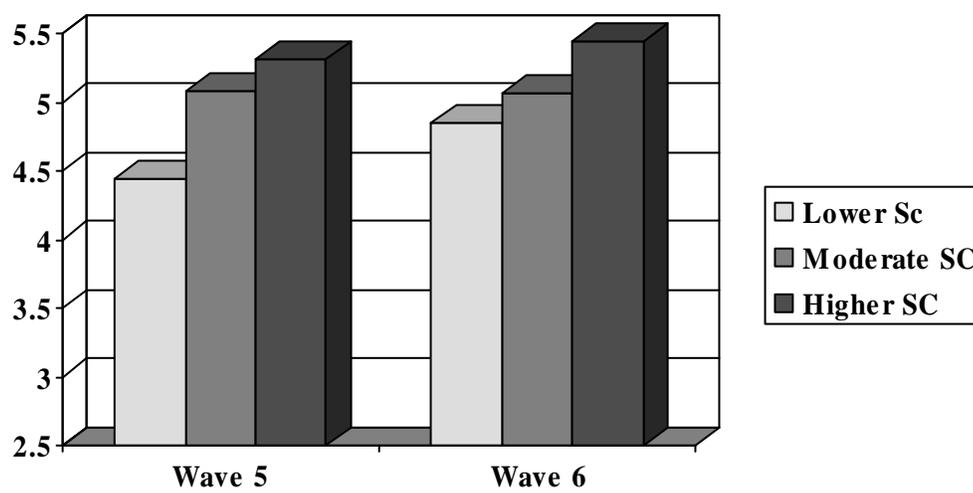


Figure 12

Hypothesis 3: Self-Esteem as Predicted by Self-Concept of Attractiveness Over Time

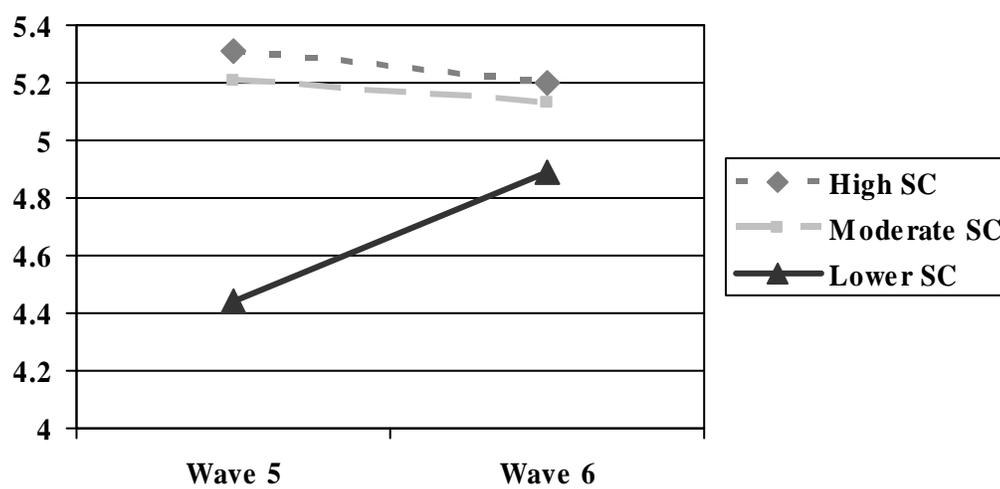


Figure 13

Hypothesis 3: Depressed Mood as Predicted by Self-Concept of Attractiveness Over Time

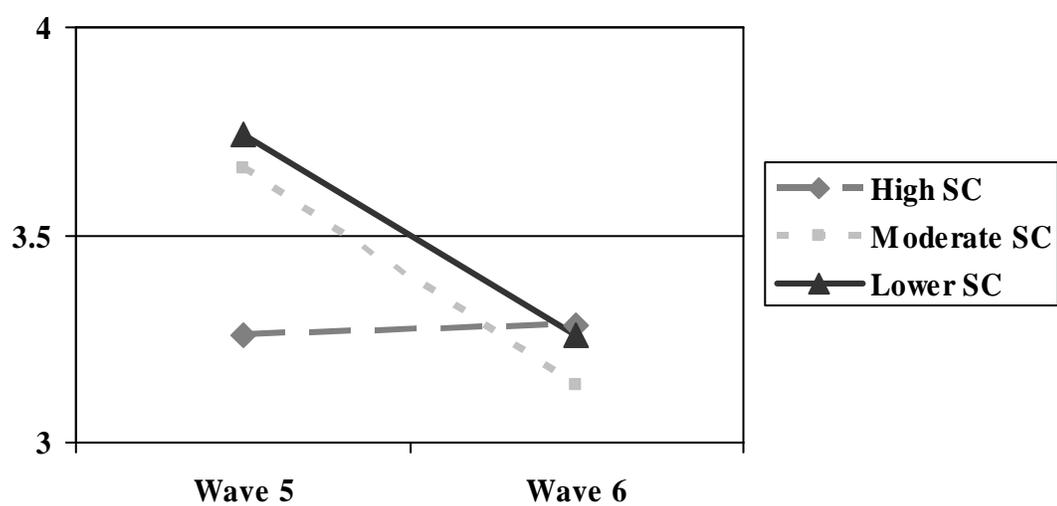


Figure 14

Hypothesis 3A: Self-Esteem as Predicted by Change in Self-Concept of Attractiveness Over Time

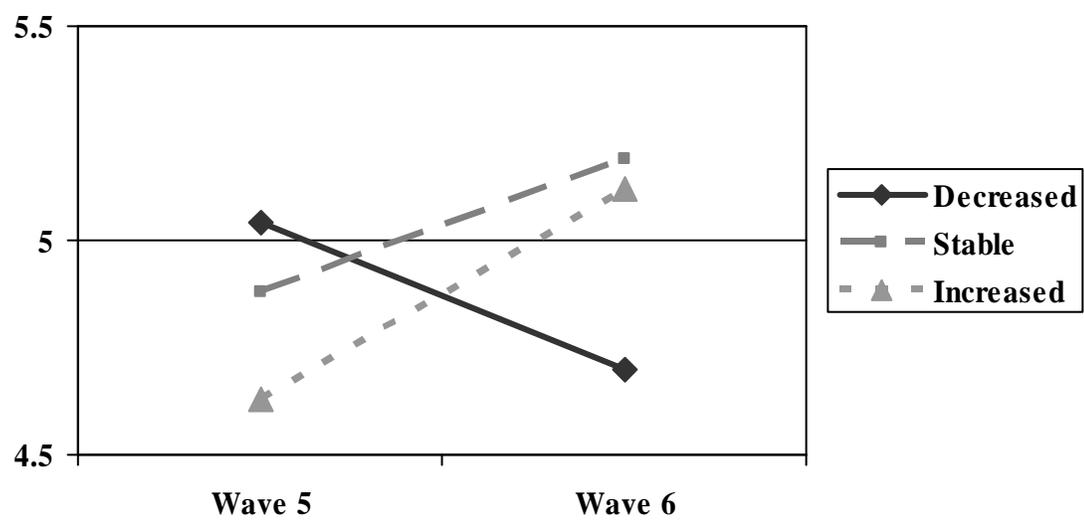


Figure 15

Hypothesis 3A (Secondary): Self-Esteem as Predicted by Change in Self-Concept of Attractiveness Over Time Controlling for Puberty

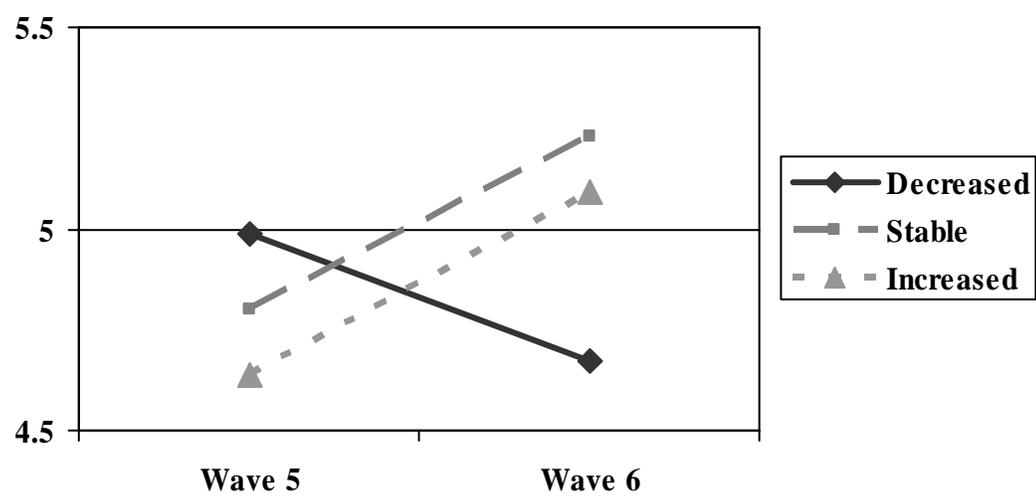


Figure 16

Hypothesis 3A: Social Isolation as Predicted by Change in Self-Concept of Attractiveness Over Time

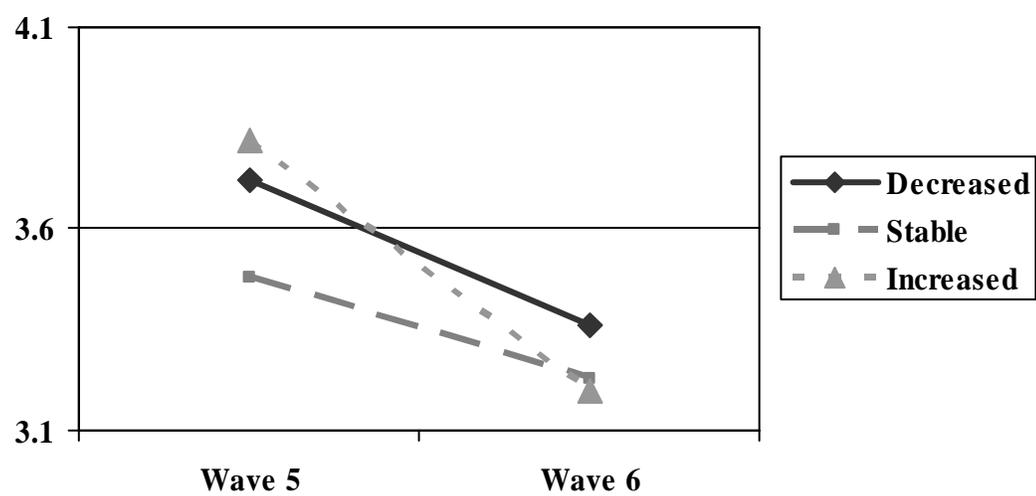


Figure 17

Hypothesis 4A: Skipping School as Predicted by Change in Self-Concept of Attractiveness Over Time

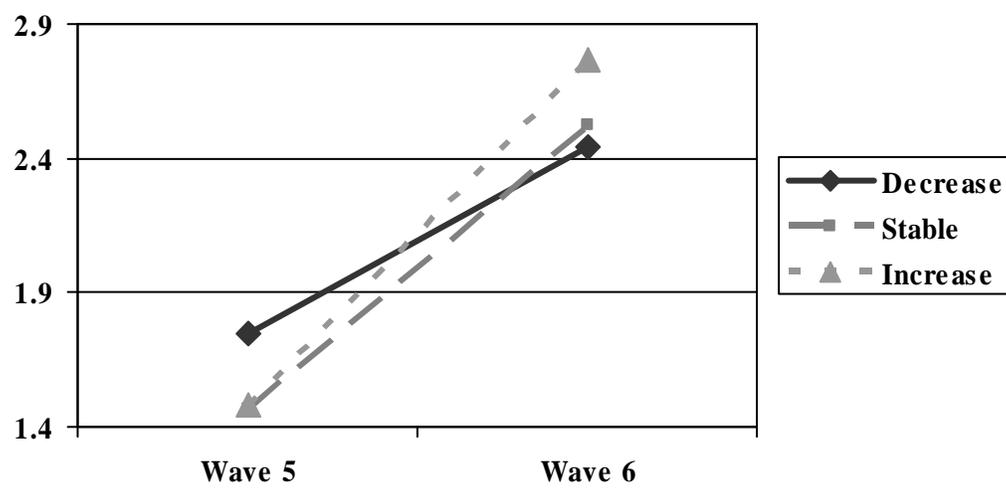


Figure 18

Disobeying Parents as Predicted by Value of Attractiveness and Change in Self-Concept of Attractiveness Over Time

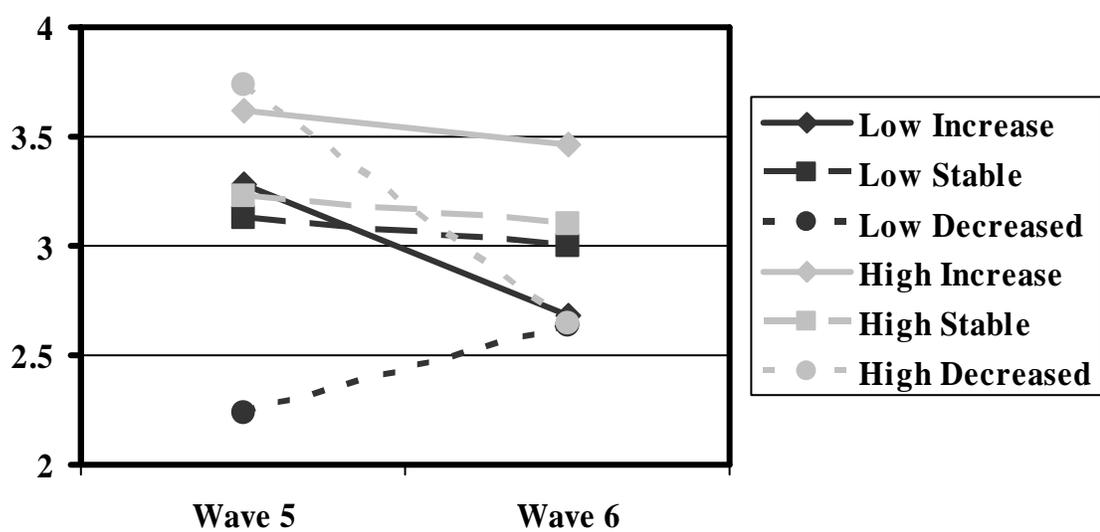


Figure 19

Aggression as Predicted by Value of Attractiveness Over Time

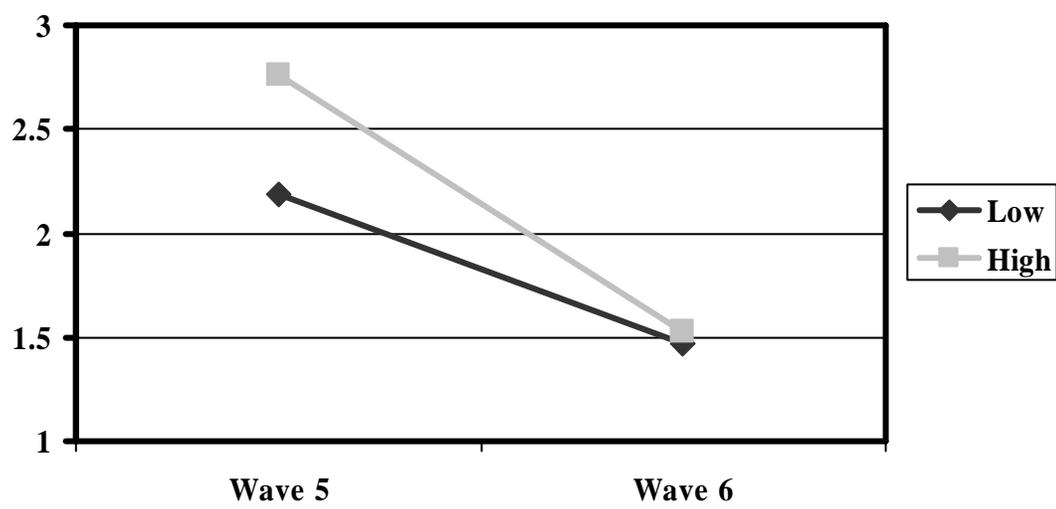


Figure 20

Secondary Analysis: Self-Concept of Attractiveness by Value of Appearing Masculine and BMI

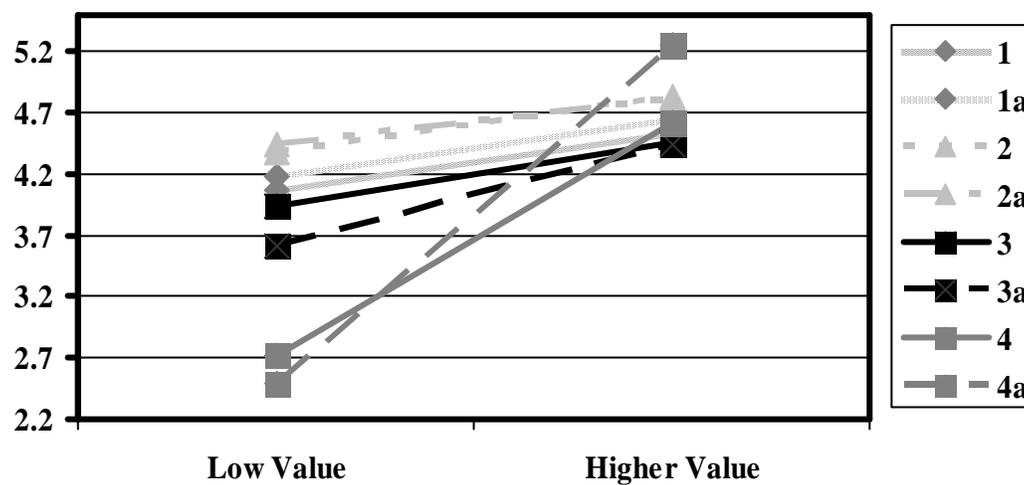
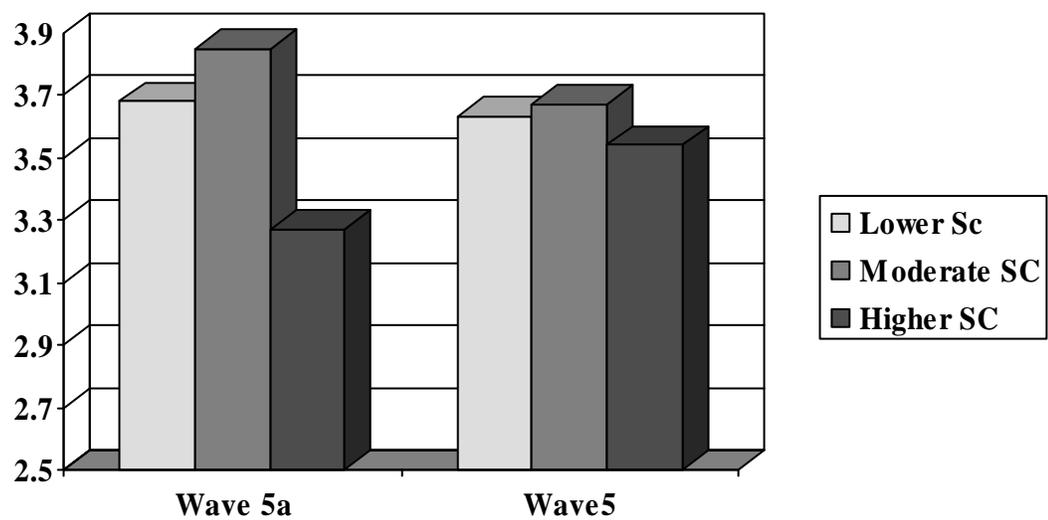


Figure 21

Social Isolation Predicted by Self-concept of Attractiveness Wave 5 and Wave 5(6 sample)



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