

Peer Influences on Weight-related Behaviors and Attitudes in Adolescence:

A Longitudinal Examination of Romantic Partner Effects

by

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor of Philosophy in the Department of
Psychology and Neuroscience in the Graduate School
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ABSTRACT

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Abstract

During adolescence, both boys and girls confront a period of heightened risk for dissatisfaction with weight and shape and engagement in unhealthy appearance-related behaviors. For many adolescents, this risk coincides with involvement in a range of romantic partnerships. Although a considerable body of empirical work has investigated same-gender peer influences on weight- and shape-related attitudes and behaviors, very little research has examined the role of romantic partners in this socialization process. Derived from social norms and social rewards theories of influence, this study examined several distinct modes through which romantic partners may influence changes in gender-specific behaviors and attitudes over a 6-month period. Participants included 214 (56% female) male and female adolescents ages 16-17 who reported having a romantic partner (of varying seriousness and relationship length) at Time 1. Results from multiple group (by gender) longitudinal path analyses revealed that both boys and girls experienced weight-related influence from a romantic partner. The seriousness and length of a romantic partner relationship moderated some, but not all, influence effects. Findings suggest that romantic relationships are important contexts for changes in adolescents' appearance-related health. Future research should examine romantic partners as contributors to both health-risk and health-promoting behaviors and attitudes.

Dedication

This work is dedicated to my loving and supportive Brechwald and Guerry families. It is dedicated especially to my husband, John, who has influenced me in the most important ways possible.

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1. Introduction

For both boys and girls, adolescence is a period of intensified attention to physical appearance (Ricciardelli & McCabe, 2004). For adolescent girls, body shape and weight are the most salient aspects of physical attractiveness, and appearance-related concerns converge upon preoccupation with attaining and maintaining a slender physique (Rodin, Silberstein, & Striegel-Moore, 1985). For most adolescent boys, in contrast, muscularity and bulk have become defining features of physical attractiveness (Pope, Phillips, & Olivardia, 2000). For a large proportion of adolescents, a focus on the appearance of their bodies is a source of significant psychological distress: an abundant and growing body of research indicates that adolescent girls, and, increasingly, adolescent boys, are vulnerable to body image disturbance and to engagement in unhealthy behaviors aimed at altering one's physique, such as extreme dieting and engagement in exercise aimed to promote weight loss or muscle gain (Ricciardelli & McCabe, 2004; Rodin et al., 1985). Further, these body-change behaviors may be risk factors for clinically significant disordered eating, and both subclinical and clinical levels of maladaptive weight-related behaviors are a concern across ethnic categories (French et al., 1997). Body dissatisfaction and weight-related behaviors have important, and potentially pernicious, effects on physical and mental health in adolescence and into adulthood.

The literature indicates that weight-related health is affected by multiple and intersecting psychological, biological, and social factors. Given the magnified importance of peers for development in adolescence (Rubin et al., 2006), a sizable number of research studies have examined the role of the interpersonal context in weight-related behaviors and body dissatisfaction (e.g., Paxton, Schutz, Wertheim, & Muir, 1999). Although some research examining best friend effects has further delineated the various “players” in an adolescents’ interpersonal milieu and found that dyadic relationship partners do influence weight-related health (Shomaker & Furman, 2009), the field knows very little about the role of “romantic partners” —boy/girlfriends and other peers with romantic affiliative ties —on weight-related attitudes and behaviors in boys and girls. This reflects a significant gap in the peer influence and weight-related health literatures, especially given that romantic partners and romantic interest is associated with physical attractiveness in adolescence (Feiring, Furman, & Brown, 1999). Indeed, it appears theoretically (and intuitively) clear that romantic partners may exert some influence over each other’s attitudes about their own appearance and associated weight-related behaviors. Empirically, findings from research on peer influences on body dissatisfaction and weight-related behaviors, and evidence from the adult literature that eating and exercise behavior is subject to partner influence, collectively suggest that adolescent romantic affiliations may be an important

locus of influence for weight-related health in both boys and girls. However, the field lacks a theoretically-driven empirical exploration of romantic affiliation influences on weight-related behaviors and body dissatisfaction in middle adolescence. The current research aims to address this significant gap in the literature through an examination of various forms of romantic partner influences in this domain.

1.1 Unhealthy Appearance-related Attitudes and Behaviors in Adolescence

Indices of unhealthy body-related health have been extensively explored in adolescent girls and young women. The most severe level of eating disturbance, specifically, anorexia nervosa (AN), bulimia nervosa (BN), and eating disorder not otherwise specified (EDNOS) appear in females far more often than males (e.g., Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993), and exhibit peak onset rates in adolescence (Bryant-Waugh, 2006; Striegel-Moore et al., 2005). As a diagnostic category, eating disorders have profound physical and psychological consequences: anorexia nervosa has the highest mortality rate of any psychiatric disorder (Birmingham, Su, Hlynsky, Goldner, & Gao, 2005), and both AN and BN are associated both concurrently and prospectively with a multitude of medical and psychological ailments, including osteoporosis, reproductive problems, chronic low body mass index (BMI), and depression and substance use (Rigotti, Neer, Skates, Herzog, & Nussbaum, 1991; Stice,

Hayward, Cameron, Killen, & Taylor, 2000). Importantly, the majority of young women presenting for treatment of eating problems do not meet criteria for either AN or BN (Striegel-Moore, Marcus, Stanton, & Gallant, 1995), suggesting that a large portion of young women are experiencing significant distress and impairment related to eating and weight but are not included in prevalence rates of eating psychopathology.

Indeed, a large number of girls without diagnosed anorexia nervosa or bulimia nervosa endorse discontent with their bodies and engage in unhealthy weight- and shape-altering behaviors, such as dieting, binge eating, laxative abuse, purging, and excessive exercise (French, Perry, Leon, & Fulkerson, 1995; Paxton et al., 1991; Rogers, Resnick, Mitchell, & Blum, 1997; Striegel-Moore et al., 1995). It is estimated that 60% of female high school students are engaged in efforts to lose weight (Center for Disease Control, 2008). It is critical to acknowledge that while rates of obesity and overweight have increased in recent years, the majority of adolescent girls are within a healthy weight range (CDC, 2008). Thus, weight-loss efforts, including dieting, are typically not appropriate for the maintenance of normal weight status.

In addition, high rates of dissatisfaction with one's body are extremely common among adolescent girls (Thompson et al., 2007). Body dissatisfaction may be defined as a "cognitive-evaluative" dissatisfaction with one's body shape and weight (Groesz, Levine, & Murnen, 2002) and operationalized as the difference between one's ideal and

perceived actual body shape and/or weight (Dunkley, Wertheim, & Paxton, 2001). This body image disturbance is both acutely distressing and associated with increased risk of eating disorders (Shisslak & Crago, 2001; Stice, 1994, 2002) and other psychopathology (Stice et al., 2000). Taken together, it appears that adolescent girls not only experience discontent with their bodies but also actively engage in attempts to modify their bodies, through dieting and other weight-reduction strategies. Both body dissatisfaction and body-change behaviors appear to be motivated by a desire to adhere to a thin female ideal (e.g., Stice, 1994).

Although the prevalence of symptoms of AN and BN among adolescents is overall significantly lower in boys than in girls (Hoek & van Hoeken, 2003), recent research has revealed that adolescent boys also experience body-related distress, including body dissatisfaction and engagement in body-change strategies (Pope, Gruber, Choi, Olivardia, & Phillips, 1997; Pope et al., 2000). Problematic eating and exercise behaviors aimed to achieve weight-loss, including dieting and extreme weight-control techniques such as fasting, are estimated to occur among adolescent boys at rates ranging from 12.5% to 26.0% (Drewnowski, Kurth, & Krahn, 1995; Neumark-Sztainer, Story, Faulkner, Beuhring, & Resnick, 1999). Importantly, however, the nature of problematic body-related behaviors appears to differ somewhat between adolescent boys and girls. Whereas girls are more likely to engage in restrictive eating, laxative and

diuretic use, and excessive exercise aimed to produce overall weight loss—a goal associated with AN and BN and consistent with cultural ideals for slenderness in females—boys report greater use of anabolic steroids, food supplements, and excessive exercise to promote muscle and weight gain (see Ricciardelli & McCabe, 2004, for a review). Although clearly not always harmful, behaviors intended to increase muscularity have pernicious correlates and consequences for both physical and psychological health, including increased risk for muscle dysmorphia (Cafri et al., 2005; Labre, 2002; Pope et al., 2000). Further, recent research has suggested that boys confront a more complex and specific male body ideal of “lean muscularity” (Leon, Fulkerson, Perry, Keel, & Klump, 1999, pg.194), and may engage in a variety of body change behaviors designed to lose weight in some regions of their body, increase weight in other areas, and increase muscularity (Ricciardelli & McCabe, 2003, 2004). Boys’ body dissatisfaction reflects this variability: research suggests that approximately one third of adolescent boys desire a larger and more muscular body, whereas another third of boys want to be thinner (e.g., Furnham & Calnan, 1998; McCabe & Ricciardelli, 2001; Neumark-Sztainer et al., 1999). There is some evidence that girls also desire a toned and muscular body (see McCabe, Ricciardelli, & Finemore, 2002). However, overall, it appears that both boys and girls desire a lean physique, but boys articulate “built”

muscles as an ideal, whereas girls strive to achieve slenderness (Ridgeway & Tylka, 2005).

1.2 Peer Influence in Adolescents' Weight-related Attitudes and Behaviors: Modes and Mechanisms

Both boys and girls appear vulnerable to sociocultural influences on weight-related attitudes and behaviors (Ricciardelli & McCabe, 2001; Smolak, Murnen, & Thompson, 2005; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), with gender differences in the nature of body dissatisfaction and the strategies adolescents choose to modify their bodies. Sociocultural models of weight-related problems posit that pervasive cultural messages regarding gender-specific appearance standards have created an environment of direct and indirect pressure to be thin for girls (e.g., Field et al., 2001; Rodin et al., 1985) and muscular for boys (Cafri et al., 2005; Leon et al., 1999; Pope et al., 2000; Thompson & Cafri, 2007). Within the sociocultural influence framework, the drive for muscularity in boys and the drive for thinness in girls – and behaviors associated with these appearance strivings-- are analogous: they are both culturally-sanctioned and socially reinforced. Both gendered appearance standards are proposed to be transmitted and reinforced through media, parents, and peers. Indeed, peers are an extremely important component of adolescents' proximal social context (Brown, 2004), and represent potentially powerful socialization agents for body-related

behaviors (Keery, van den Berg, & Thompson, 2004; Shroff & Thompson, 2006). Both cross-sectional and longitudinal studies have found support for associations between peers and both body dissatisfaction and appearance behaviors, with some gender differences in these relationships. Overall, there is more evidence for peer influence of weight-related behaviors among girls. This is perhaps a reflection of the observation that girls are generally exposed to greater and more consistent pressure to attain an attractive body (Rodin, Silberstein, & Striegel-Moore, 1985), compared to their male counterparts.

Peer influence has been variously defined in the literature. Numerous developmental, social, and clinical psychology investigators have consistently demonstrated a homophily effect among adolescents: teens' behaviors and attitudes are remarkably similar to the behaviors and attitudes of their friends. Homophily theories suggest that such similarities between adolescents and their friends may be due to youths' initial tendencies to affiliate with friends who already possess similar behavioral proclivities and like-minded attitudes (i.e., selection effects), as well as a tendency for adolescents' and their friends' behavior to become more similar over time (i.e., socialization effects; Kandel, 1978). Broadly, socialization, or peer influence, refers to the process by which adolescents' behavior or attitudes are affected or altered through contact with peers. In the literature, socialization has largely become conceptually fused

with influence to refer to the same process. Fundamentally, peer influence specifies behavior change over time; it is thus most appropriately assessed through measurement of peers' behavior and adolescents' behavior at multiple time points, via experimental or longitudinal research designs. Indeed, several studies include adolescents' perceptions of their peers' behavior/attitudes or actual levels of their peers' behavior as predictors of changes in adolescents' own behavior. However, numerous studies of ostensible peer influence have utilized cross-sectional designs, providing information about concurrent associations between adolescents' and their friends/peers levels of behavior or attitudes, but no true assessment of influence effects (see Prinstein & Dodge, 2008). The literature on social influences of body-related behaviors is particularly limited by this methodological issue.

Recent theoretical discussion has further explicated peer influence effects measured longitudinally. Brown and colleagues typify different peer influence "modes", or direct and indirect ways in which influence -- within both group-level and dyadic relationship contexts -- may actually occur in the peer environment over time (Brown, Bakken, Ameringer, & Mahon, 2008). The first of these modes is "peer pressure", which has been typically operationalized as direct attempts by peers to foster or impede behaviors (e.g., encouragement, urging; Brown, Clasen, & Eicher, 1986). In the body-related behaviors domain, peer pressure has been measured as encouragement

to embody a certain appearance standard (i.e., to look thin or muscular) and also encouragement to engage in certain behaviors (e.g., dieting, lifting weights, exercising) believed to achieve these appearance standards. Ample evidence has suggested that “peer pressure” to be thin is concurrently and longitudinally associated with unhealthy eating behaviors and body dissatisfaction in girls (Paxton et al., 1999; Pike, 1995; Presnell, Bearman, & Stice, 2004; Thompson et al., 2007; Vincent & McCabe, 2000; Young, McFatter, & Clopton, 2001). Preliminary support for a role of peer effects has revealed that adolescent girls and boys who perceive encouragement to diet and increase muscles from their same-sex and opposite-sex best friends and parents also report engagement in weight-loss and muscle-gaining behaviors 8 months and 16 months later (McCabe & Ricciardelli, 2003; McCabe, Ricciardelli, & Holt, 2005; Ricciardelli & McCabe, 2003). A concurrent association between perceived encouragement to lose weight and disordered eating behaviors has also been found for both adolescent boys and girls (Vincent & McCabe, 2000). Similarly, a recent study reported that both adolescents’ perceptions of pressure from friends, and friend-reported pressure toward the target adolescent to be thin, predicted increases in disordered eating over a one-year period (Shomaker & Furman, 2009).

Modeling has been identified as a second, indirect mode through which peer pressure may operate (Bandura & Walters, 1963). Modeling consists of peers engaging

in behavior or endorsing attitudes of interest, which are then observed and adopted by affiliated adolescents. For example, an adolescent girl's restrictive eating behavior (e.g., eating only a handful of carrots at lunch) may be noticed by the friends who share her table in the cafeteria, and they may adopt the behavior as a result of the girl's behavioral modeling. An apt measurement of modeling includes an adolescent's perceptions of her peers' behavior or attitudes. Indeed, cross-sectional findings reveal that perceptions of friends' weight-related behavior are associated with adolescent girls' own weight-related behaviors (e.g., Eisenberg, Neumark-Sztainer, Story, & Perry, 2005; Paxton et al., 1999).

A third mode includes teasing or criticism, or "antagonistic behaviors" (Brown et al., 2008), issued by peers and targeting adolescents. In the body domain, teasing typically targets various aspects of adolescents' physical appearance (weight, shape) rather than specific appearance-related behaviors. Research has indicated that adolescents' reports of weight-related teasing from peers is associated concurrently and longitudinally with engagement in unhealthy weight-loss strategies and heightened body dissatisfaction for both boys and girls (Donovan, Spence, & Sheffield, 2006; Neumark-Sztainer et al., 2002; Thompson et al., 2007; Van den Berg, Wertheim, Thompson, & Paxton, 2002). These antagonistic behaviors—a direct, although occasionally subtle, mode of influence-- function to convey social disapproval of

adolescents' current behaviors or appearance, and are usually measured through questionnaire report of an adolescents' subjective teasing experience.

Appearance-related compliments represent a fourth mode of influence. Like peer pressure and teasing/criticism, compliments are a direct form of peer influence. They generally clearly convey approval and immediate reinforcement for appearance, and also for the behaviors that may be associated with appearance. Although comparatively less is known empirically about the effect of appearance-related compliments on weight-related behaviors among boys or girls, it has been proposed that compliments about appearance may contribute to body image disturbance through alerting or reminding recipients (particularly girls) that their appearance is subject to evaluation (Herbozo & Thompson, 2006). Objectification theory (Fredrickson & Roberts, 1997) suggests that this attention to how others view one's body transforms the body into an object, which leads to negative self-evaluations of one's appearance. Recent research utilizing this framework revealed that college-aged women who feel good about receiving weight-related compliments also report higher levels of body dissatisfaction (Calogero, Herbozo, & Thompson, 2009). Relevant theory and existing research does suggest that compliments may have a (perhaps counterintuitive) detrimental effect on the way girls feel about their appearance. Additionally, there is a small amount of evidence for this influence mode in boys. A recent study examining

compliments and encouragement to be muscular in late adolescent boys and girls found that boys perceived more of this particular type of influence from their romantic partners compared to girls. Further, this influence from a romantic partner was significantly associated with increases in pursuit of muscularity one year later, for both boys and girls (Shomaker & Furman, 2010).

Finally, although not explicitly stated by Brown and colleagues (2008), a fifth mode of influence may be conversations or talk about the target behavior or attitude. Although conversations may include teasing, encouragement, and modeling, they also represent a potentially distinct type of indirect peer influence through increasing the salience of the behavior in question. Conversations about weight, shape, and appearance more generally may serve to call attention to the preferences, interests, and preoccupations of an adolescent's peer group or dyadic relationship partner. Adolescents' report of the frequency of conversations with friends about appearance, including weight-loss and muscle-gaining strategies, do appear to be associated with higher levels of body-related behaviors, for both boys (Jones & Crawford, 2006; Jones, Vigfusdottir, & Lee, 2004; Smolak et al., 2005) and girls (Jones & Crawford, 2006; Jones et al., 2004; Levine & Smolak, 1992; Paxton et al., 1999; Vincent & McCabe, 2000; Wertheim, Paxton, Schutz, & Muir, 1997).

Each of these modes of influence is associated with particular *mechanisms*, or purported reasons for why adolescents change their behavior in response to their peers. Modes represent the behavioral ways in which mechanisms are enacted or exerted. Indeed, buoyed by social psychological models, a growing body of research has specifically explored the mechanisms by which general peer influence operates among adolescents (see Dishion & Dodge, 2005; Prinstein & Dodge, 2008). Although existing research on peer influence of body-related behaviors has not consistently cited the reasons for changes in behavior and attitudes (mechanisms) and the ways in which these occur (modes), the identified mechanisms and modes applicable to other adolescent behaviors are also relevant to this domain. Notably, peer influence may operate via any of these modes or mechanisms within both group-level and dyadic relationship contexts. Of the mechanisms proposed in the peer influence literature, two have been selected for the current study as particularly relevant to socialization between romantic partners: social rewards (reinforcement) and social norms. In this study, the modes discussed previously are considered to be linked specifically with these mechanisms.

1.2.1 Social rewards and reinforcement

Theorists have suggested that conformity to peers may be motivated by perceptions of the social rewards linked to the attitudes and behaviors endorsed by these peers (Fishbein & Ajzen, 1976). Adolescents rely on feedback and acceptance from

their peers as bases for a sense of self-concept. To establish a favorable self-identity, it therefore behooves adolescents to engage in behaviors that will ensure peer acceptance, belonging, and status. Recent work has demonstrated that peers are particularly motivated to engage in behaviors associated with popularity (Cohen & Prinstein, 2006; Gerner & Wilson, 2005; Gibbons, Gerrard, Blanton, & Russell, 1998; Juvonen & Ho, 2008) or friendship enhancement (Paxton et al., 1999). Specifically, it appears that affiliation with adolescents high in peer-perceived popularity is associated with increases in adolescents' maladaptive weight-related behaviors over time (Rancourt & Prinstein, 2010). Indeed, investigation of sociocultural influences on weight-related behaviors among girls has consistently implied that both individuals and the broader society reward adolescents who adhere to a thin female norm (e.g., Stice, 1994). An extension of this view suggests that behaviors that promote appearance change consistent with gender-specific cultural norms (generally, thin for girls, muscular and lean for boys) will be met with positive appraisal from the immediate peer environment (school, grade, crowd, clique, or dyadic relationship partner). Within romantic relationships, as previously mentioned, social rewards for body-related behaviors may include greater physical attractiveness, sexual desirability, or liking by one's partner *or* potential partner. Indeed, desired attainment of physical appearance standards believed to be preferred by the opposite sex does predict endorsement of body change strategies and

body dissatisfaction, in both boys and girls (Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006; Ricciardelli & McCabe, 2004). Within a romantic context, social reward is the salient mechanism for appearance-related compliments. Further, appearance-related teasing and criticism may be conceptualized as social *punishment*, arguably related to social rewards but with the intent to reduce or eliminate the expression of a particular appearance or behavior.

1.2.2 Social norms

The social norms mechanism is intimately tied to social rewards. Indeed, the process of peer socialization relies on adolescents' perception of social norms that clearly communicate a link between a behavior(s) and a social reward(s), or an appearance standard and social reinforcement. However, the social norms mechanism is also theoretically distinct from social rewards. Work in social psychology suggests that behavioral and attitudinal norms of well-regarded or salient reference groups—and those of less-relevant peer groups-- play a dominant role in adolescent behavior. Both deviance regulation theory (Blankton & Christie, 2003) and optimal distinctiveness theory (Pickett & Brewer, 2001) suggest that adolescents are motivated to conform to selected peer norms but to eschew others, in pursuit of a favorable sense of self. Adolescents tend to adopt behaviors that are espoused by valued, similar, or close peer(s), even without the explicit possibility of receiving social rewards for the

behaviors. This observation is particularly important in considering how romantic partnerships may generate, and sustain through reciprocal influence processes, relationship norms that become intimately linked to each partners' sense of social and individual identity. Relationship norms may be based on both appearance and on appearance-related behaviors and attitudes. In the dyadic relationship context, behavioral modeling exerts influence effects through an illustrative display of the social norms of the partnership. Social norms may also be expressed or pertinent within appearance conversations, through verbalization of behaviors or appearance that is lauded or accepted by the interpersonal unit. Social norms may also be relevant for our understanding of teasing/criticism in the appearance realm. Research from influence of other adolescent behaviors suggests that failure to adhere to dominant or valued social norms for a behavior (or appearance) may be met with social consequences in the form of exclusion, rejection, or victimization from peers (Juvonen & Galvan, 2008). In addition, encouragement to engage in appearance-related behavior or to achieve a particular appearance outcome (e.g., a thin body) may be conceptualized as a means through which a relevant peer may imply social norms, even at the dyadic level, for appearance.

1.3 Romantic Relationships as a Unique Developmental Context for Influence

Romantic relationships likely provide an interpersonal context that is distinct from other peer relationships in adolescence (e.g., Collins, 2003). However, the vast majority of work on adolescent peer influence has examined undefined peer or friend effects; influence of adolescent romantic partners has been relatively neglected. One study of drug use among teens reported that romantic partners are ranked behind only family members as being difficult to refuse an offer of drugs (Trost, Langan, & Kellar-Guenther, 1999), suggesting that romantic partners are extremely influential. However, it is difficult to draw conclusions based on such limited data. Further, the variability and complexity of romantic experiences in adolescence has often been obscured in existing romantic partner influence research.

Indeed, study of romantic relationships and romantic experiences among adolescents has been fraught with definitional ambiguity and inconsistency (Furman, Feiring, & Brown, 1999). As noted by several prominent peer relations researchers, romantic involvement at this developmental period constitutes a heterogeneous category; subtypes of involvement may include flirtation, “hooking up”, casual dating, “friends with benefits”, and boy/girlfriend (Furman & Collins, 2009; Furman & Hand, 2006). Conceptualizations of romantic relationships are somewhat contingent on local social norms, geography, culture, and age (Furman et al., 1999; Giordano, Manning, &

Longmore, 2006). A definition of “dating” may vary from school to school, or even within a school, across crowds or friendship cliques. Across studies, romantic relationships have been defined variously as “when you like someone and he/she likes you back” (Giordano, Longmore, & Manning, 2001), “special romantic relationship” (Carver, Joyner, & Udry, 2003), or “boyfriend or girlfriend” (Simon, Aikins, & Prinstein, 2008). Research suggests that involvement in a romantic partnership is normative by middle to late adolescence (Carver, Joyner, & Udry, 2003; Giordano, Manning, & Longmore, 2006), although the percentage of adolescents endorsing engagement in a current relationship may vary according to how the romantic relationship is defined or how the definition is interpreted by adolescent participants (Furman & Hand, 2006; Giordano, Manning, & Longmore, 2006).

Close dyadic romantic relationships and close friendships are similar in many respects: they are both voluntary, ongoing dyadic relationships that are mutually acknowledged by both partners and characterized by high levels of emotional intimacy (Furman & Collins, 2009; Shulman, Laursen, Kalman, & Karpovsky, 1997; Sullivan, 1953) and egalitarianism (Hartup, 1993). Both friendships and romantic partnerships primarily provide adolescents with companionship, affiliation, and recreation (Furman & Wehner, 1994) and high levels of support (Furman & Buhrmester, 1992). Adolescents spend significant amounts of time with both best friends and romantic partners, and by

middle adolescence, teens who report having a romantic partner, also report that they spend more time with this person than with friends (Laursen & Williams, 1997). In fact, one study found that nearly half of late adolescents' best friends were also considered romantic partners (Hendrick & Hendrick, 1993). Taken together, this functional and structural congruence suggests that both same-sex close friends and romantic partners may serve as similarly potent agents of influence, and thus that the influence effects observed for best friends may be also relevant for romantic partners. However, although ongoing dyadic romantic relationships may be described by adolescents as sharing many features of their best friendships, other types of romantic relationships with peers—"hooking up" relationships, casual dating relationships, or flirtatious relationships-- may not be comparable to dyadic friendships. Thus, research is needed to further delineate the characteristics of these myriad romantic relationships and the influence of these relationships on psychosocial adjustment (e.g., Furman, Feiring, & Brown, 1999). In particular, these many types of romantic partners may exert critical influence over adolescents' attitudes and behaviors, particularly those related to appearance.

Indeed, for a majority of youth, a puberty-induced shift towards considering peers as potential romantic partners intensifies a focus on appearance and attractiveness, perhaps especially for girls (Levine & Smolak, 1992). Indeed, unlike friendships,

romantic relationships usually involve some degree of passionate affection for one another, physical attraction, and sexual desire and/or sexual activity (Collins, 2003; Davis & Todd, 1982). Even without engagement in sexual activity, the presence of physical attraction and salience of physical appearance within a romantic partnership seems likely to render these relationships particularly conducive to body esteem and body-change behaviors. Past research has demonstrated that girls endorse various beliefs linking attractiveness to thinness and linking thinness to popularity and dating success (e.g., Lieberman, Gauvin, Bukowski, & White, 2001; Simmons & Blyth, 1987; Wertheim et al., 1997). Similarly, adolescent boys cite a desire to increase romantic potential as a motivation for their own muscle-amplifying steroid use (Bahrke, Yesalis, Kopstein, & Stephens, 2000; Wichstrom & Pedersen, 2001). Boys have also reported that a girl's thinness is a determinant of her physical attractiveness and dating potential (Paxton, Norris, Wertheim, Durkin, & Anderson, 2005). Thus, behaviors aimed to alter body shape and weight and presumably increase attractiveness assume particular value in the context of romantic experiences.

Unfortunately, very little is known about how romantic interests and relationships may influence adolescents' weight-related attitudes and behaviors. A handful of studies have initiated research on the effects of these relationships on disordered eating related to the thin ideal among adolescent girls. One empirical focus

has examined the impact of heterosocial activity (dating and other opposite-sex interactions) on disordered eating. It appears that concurrent onset of menarche and dating in early adolescent girls may be a risk factor for body dissatisfaction and disordered eating behaviors (Cauffman & Steinberg, 1996; Gralen, Levine, Smolak, & Murnen, 1990), although this research is somewhat limited by cross-sectional findings. Additionally, the role of opposite-sex interaction in unhealthy eating behaviors appears to be most relevant for younger adolescents (Smolak, Levine, & Gralen, 1993). Romantic partner influences on thin-striving behaviors in both boys and girls has also been investigated, although this work is limited to only two studies, with mixed findings. In their recent longitudinal examination of interpersonal influences on adjustment, Shomaker and Furman (2009) found that perceptions of physical appearance criticism from a romantic partner, but not a close friend or mother, was associated with increases in disordered eating behavior one year later. Also in this sample, perceptions of romantic partner pressures (reinforcement of a thin ideal) prospectively predicted changes in eating problems. In a separate longitudinal study of adolescents, univariate analyses demonstrated a significant role of friend pressure to be thin in increases in body dissatisfaction over time, but no predictive support for pressure from dating partners (Presnell et al., 2004). Importantly, in addition to generally limited data regarding romantic partner influences on weight-loss behaviors, the literature lacks any

published examination of romantic partner pressures to engage in muscle-gaining strategies, potentially underestimating interpersonal effects in body-related behaviors, especially for boys. Further, almost no research has adopted a broader view of romantic relationships to examine the effects of youth who are engaged in a form of romantic affiliation that may not constitute a stable, dyadic boyfriend or girlfriend relationship.

Findings from the adult literature may offer some insight regarding the role of opposite-sex influences on weight-related health. Consistent with the theoretical viewpoints of Cooley (1902), Mead (1934), and Felson (1985) suggesting that self-evaluation of personal attributes (particularly those that are easily perceived by others) depends upon how we believe others view us on those dimensions, a small body of research has examined how reflected appraisals from opposite-sex agents may influence body esteem. In a series of similar studies, investigators have presented both men and women with same-gender figures (silhouettes) ranging from thin to overweight. Men consistently rate the male shapes they consider ideal, most like themselves, and most attractive to women as very similar to one another; however, women's ratings reflect a perception that their current size is larger than both the figure most attractive to men and to their ideal body size. Additionally, both men and women tend to misperceive the figures deemed most attractive to the opposite sex, but in opposite directions: men believe women desire a male figure larger than what is actually indicated by women,

and women perceive men as desiring a smaller female figure (Fallon & Rozin, 1985; Rozin & Fallon, 1988; Thompson, 1991). These researchers have concluded that the pattern of perceived-actual discrepancies in desirable body size functions as pressure for women to lose weight. Indeed, an investigation of perceived versus actual body size preferences in actual romantic partnerships among college-aged young adults found that greater discrepancies between women's *perception* of their current romantic partners' ideal female body size and her rating of her own current size was associated with higher levels of body image and eating disturbance (Tantleff-Dunn & Thompson, 1995). Findings were less conclusive for men; discrepancies did not appear to robustly relate to body-related criterion measures. Subsequent cross-sectional research has generally replicated the finding that a woman's perceptions of her partner's dissatisfaction with her body are associated with detrimental eating-related behaviors and body dissatisfaction (Bergstrom, Neighbors, & Lewis, 2004; Miller, 2001), and that women consistently misperceive their partners' actual opposite-sex body size preferences (Markey & Markey, 2006; Markey, Markey, & Birch, 2004). Collectively, this research suggests that perceptions of romantic partners' appearance preferences are important for body-related health, particularly for women.

1.4 Current Study

In sum, extant research on peer effects on body-change strategies and appearance suggests that peers' behavior (teasing/criticism, modeling, compliments, appearance conversations, and pressure/encouragement) influences both adolescent boys' and girls' weight-related health. However, this research is limited in several important ways.

First, although critical exceptions exist, the majority of research on weight-related behaviors in both genders is cross-sectional, obscuring detection of causal relationships between peer constructs and behavioral variables. Second, although studies of peer influence in other behavioral domains indicate that adolescents' close dyadic relationships (friendships) are important loci for influence processes (e.g., Prinstein, Meade, & Cohen, 2003), relatively less is known about weight-related influence effects within other dyadic peer relationships that are typically most salient in middle-adolescence, notably romantic relationships. Importantly, no research has examined the effects of various types of romantic partners (boy/girlfriends, casually-dating peers, etc) on weight-related behaviors and body dissatisfaction. Third, peer influence of weight-related health behaviors has mostly been examined for weight-reducing behaviors, with the goal of identifying precursors to AN and BN. Far fewer empirical investigations have looked for influence effects on muscle-gaining behaviors, and only one study to our knowledge has examined romantic partner influences on muscle-gaining behaviors

(Shomaker & Furman, 2010). Fourth, study of weight-related influence in adolescence is largely absent of focused exploration of the modes and/or mechanisms at play in observed effects. In particular, only one extant study has examined romantic partner effects on these behaviors with a specific focus on the ways in which influence may be enacted (Shomaker & Furman, 2009). Although this study did explore dyadic relationship effects (romantic partner and close friend) through appearance-related compliments and criticism, the authors did not explicitly examine a social norms mechanism (e.g., modeling), nor did this study measure gender-linked outcomes (i.e., muscle-gaining behaviors for boys and weight-loss behaviors for girls). Further, this study utilized a restricted definition of romantic partner (boyfriend/girlfriend).

It is argued that a theoretically-driven examination of the modes (teasing/criticism, compliments, modeling, pressure/encouragement, and appearance conversations) and related mechanisms (social rewards and social norms) underlying romantic partner influence processes will advance understanding of the complex and multifaceted nature of peer influence processes in adolescence in novel and stimulating directions. Specifically, an analysis of how influence occurs (or does not occur) within these significant peer relationships will greatly expand the scope of our understanding about peer influence in diverse types of relationships, and will do so for both boys and

girls within a relatively unexplored behavioral domain: appearance-related behaviors and attitudes.

The current research contains two primary goals. First, this study will aim to examine specific hypotheses related to romantic partner influence of weight-related behaviors for three distinct modes-- criticism/teasing, compliments, and modeling. These modes are proposed to be largely related to two broad mechanisms: criticism/teasing is a manifestation of the social rewards mechanism (namely, the converse of social rewards, social punishment). Compliments are also proposed to be a form of the social rewards mechanism. Modeling is proposed to be a reflection of the social norms mechanism, through communicating parameters for attitudes and behaviors endorsed by an individual. This study will also include exploratory analyses of pressure/encouragement, conceptualized here as a mode through which social norms may be explicitly communicated to a romantic partner. Appearance conversations, which function both to increase the salience of weight and shape within a romantic dyad and to transmit preferences and concerns about weight/shape between two romantic partners, are considered within this study to be primarily a social norms mechanism. The present research will also examine two primary outcome variables: body dissatisfaction (for both genders) and weight-change behaviors (weight-loss methods for girls, and weight-gain methods for boys). Drive for the culturally-sanctioned gendered

appearance ideal will be examined in exploratory analyses (drive for thinness among girls, drive for muscularity among boys).

Primarily, this study aims to (1) examine romantic partner influence effects across these modes of influence for gender-typical forms of weight-related behaviors (weight-loss and muscle-gain) and (2) examine the type of romantic relationship as a moderator of observed influence effects. Analyses will be conducted within a diverse sample of 16-17-year-old adolescents who report that they have engaged in a broadly-defined romantic relationship (e.g., consider themselves to be engaged in a relationship with a romantic partner) either at the time of the initial data collection or within the prior 6 months of the data collection. Study of influence modes across these romantic relationships and across both genders will provide a basis for important inferences about the salience of peer influence mechanisms for “more-than-friends”, in a behavioral and attitudinal domain with critical implications for physical and mental health. The following hypotheses are based on findings from existing empirical literature and theory.

1.4.1 Hypotheses

Given the importance of romantic experiences in adolescence (e.g., Brown, Feiring, & Furman, 1999), it is expected that socialization of weight-related (and appearance-related) behaviors and attitudes will occur within a range of romantic

partner experiences. It is anticipated that these influence effects will vary somewhat depending on mode of influence, type of romantic partner, gender of the influenced adolescent, and type of behavior/attitude (in pursuit of a thin ideal or a muscular ideal).

The current research measures each of the modes of influence reviewed earlier through adolescents' perceptions of their identified romantic partner. Romantic partners will be defined for adolescents as individuals they consider to have been involved with in any kind of romantic relationship, either currently or in the six months prior to data collection. Criticism/teasing, compliments, pressure/encouragement and appearance conversations will be assessed through questionnaire measures indicating frequencies of these events with each relationship partner. Modeling will be measured through adolescents' perceptions of their relationship partners' body dissatisfaction. For girls, weight-related outcome variables will include body dissatisfaction, weight-loss behaviors, and drive for thinness. Boys' weight-related dependent variables will include body dissatisfaction, muscle-gaining behaviors, and drive for muscularity.

As in previous studies of peer influence conceptualized as behavioral/attitudinal change over time, the current study will employ a longitudinal design with two data collections over a six-month interval. Time 1 data collection, in the early fall of participants' 11th grade year, will include adolescents' report of the identity of their current and recent (past 6 months) romantic partners, the length of their relationship

with this partner, their relationship partners' behaviors and attitudes related to weight, and a baseline measurement of adolescents own weight-related attitudes and behaviors and body mass index (BMI). Time 1 peer-related constructs will function as predictors of change in behaviors and attitudes over time. Time 2 data collection will include assessment of the weight-related attitudes and behaviors initially measured at Time 1 (outcome variables). In addition to longitudinal analysis, the current study will examine concurrent relationships between relationship constructs and weight-related attitudes and behaviors.

1.4.1.1 Gender differences

Overall, it is anticipated that girls, compared to boys, will report greater perceptions of peer influence of body-related behaviors across all three primary modes.

1.4.1.2 Hypotheses for girls

Commensurate with the expectation that appearance is a particularly sensitive and salient aspect of attractiveness within romantic contexts, it is hypothesized that for girls at Time 1, more perceived teasing/criticism related to thinness, and more compliments from romantic partners related to thinness will be longitudinally associated with increases in weight-related behaviors associated with a thin ideal and increases in body dissatisfaction. It is expected that girls' perceptions of their romantic partners' muscle-gaining behaviors (pursuit of the male cultural ideal) will not be

related to their own weight-reducing behaviors. However, perceptions of greater body dissatisfaction in romantic partners at the first data collection will be associated with increases in girls' body image disturbance over time (i.e., a specific body dissatisfaction modeling effect between romantic partners is hypothesized). Because weight gain (even related to muscularity) is not commensurate with the cultural ideal for female beauty, it is not expected that romantic partners will exert influence on girls' muscle-gaining behaviors, and these constructs will not be examined for girls.

1.4.1.3 Hypotheses for boys

For boys, it is expected that in the fall, more perceived romantic partner-issued teasing/criticism related to muscularity and more compliments from romantic partners related to muscularity will be longitudinally associated with increases in muscle-gaining behaviors and body dissatisfaction. A modeling effect is not hypothesized; that is, it is not anticipated that perceptions of greater body image disturbance or weight loss behaviors in romantic partners will be associated with increases in boys' body dissatisfaction or muscle-gaining behaviors over time. Because weight loss is not consistent with dominant male appearance ideals, it is not expected that romantic partners will exert influence on boys' weight-loss behaviors or desire for thinness, and these variables will not be assessed in boys.

1.4.1.4 Romantic partner affiliation as moderator

Given the broad range of romantic partners who may be relevant for peer socialization effects, it is hypothesized that the impact of romantic partner influence will be moderated by the length of the relationship and the nature of the romantic relationship (seriousness of the affiliation). In the current analyses, an algorithm will be used to calculate a continuous quantitative indicator of the proposed “affiliation value” of the romantic relationship. The rationale for this approach, and the factors that will be included in the algorithm, are described in greater detail in the next section.

Examination of the moderating effect of romantic relationship significance to peer influence processes is a notable extension of previous limited work on romantic partner effects.

2. Method

2.1 Overview

The current research is part of a longitudinal study examining adolescent adjustment in one participant cohort (academic grade) at regular intervals approximately six months apart, beginning in the spring of participants' 9th grade year. To date, the project has collected questionnaire data from participants across six time points, beginning in Spring 2009. Data collection for the present study occurred across two time points, within a three-week time period in October and November 2010 (October 14-November 3) and within a three-week time interval in March and April 2011 (March 25-April 14). For ease of description, the October-November 2010 data collection is referred to as Time 1, and the March-April 2011 data collection is referred to as Time 2. The project has been continuously approved by the institutional review boards of the University of North Carolina, Chapel Hill and Duke University.

2.2 Participants

Participants included 214 students (56% female) in grade 10 at Time 1. All participants were between the ages of 16 and 18 years (for girls, $M = 16.56$, $SD = 0.40$; for boys, $M = 16.82$, $SD = 0.49$). At the start of the larger longitudinal study, 712 students were recruited from ninth grade classrooms across three high schools in the rural Southeast United States. Of these eligible students, 426 returned parental consent forms.

In the fall of participants' 11th grade year, or at Time 1 of the current study, 360 students participated. The current sample of participants included adolescents who reported both having been involved in some type of romantic relationship within the previous six month period at the time of the Time 1 data collection in Fall 2010, and who completed questionnaires at the subsequent Time 2 data collection in Spring 2011 (N = 214). The ethnic composition of the sample included 52% White, 23% African American, 15% Latino or Hispanic, and 9% from other ethnic backgrounds (see Table 1 for demographic information presented by gender). Attrition analyses indicated that participants included in the sample (i.e., participants with a romantic partner at Time 1 and outcome data at Time 2) were not significantly different from participants not included in the sample on any romantic partner influence variables.

2.3 Procedure

With assistance from school administrators at each site, the project was initially presented to all students in the 9th grade at three high schools within the same county in September 2008 by project staff at school assemblies. Parental consent forms were given to all 9th grade students at these events or soon afterwards in their regular classrooms. The project and consent forms were also presented to Spanish-speaking families during an evening meeting at one of the participant high schools.

As an incentive for returning signed consent forms (with or without affirmative consent to participate), students were (1) immediately given a candy bar by their first period homeroom teacher upon returning the consent, and (2) entered into a school-wide drawing for 5-6 larger prizes. These larger incentives included items of increasing value, such as gift certificates for local retailers for \$10-15, iPod Shuffles, and an iPod Touch. A series of drawings including names of students who returned consent forms were conducted a few times per week during the designated consent form return period, and student recipients of the incentives were announced to the entire student body. This public recognition of recipients was intended to further encourage students to turn in consent forms. In addition, lottery items were distributed according to increasing worth (i.e., gift certificates were distributed prior to the iPod shuffles and iPod Touch), to maintain the incentive value of the lottery.

Because the current study is embedded within a larger longitudinal research project, the procedures for this study are identical to procedures consistently used since the start of the longitudinal research project and as such were familiar to participants. As during previous data collections, a packet of self-report questionnaires was administered to students on school premises (either in a gym, cafeteria, or auditorium, according to school staff preferences) for 75 minutes during a typical school class period. At each school site, at least one school administrator typically remained in the testing

room during this period, but research assistants (including Whitney B. Guerry) were responsible for the administration of the questionnaires. Every effort was made to seat participants with adequate space between them so as to maximize privacy during completion of questionnaire items. Throughout the testing period, research staff walked around the room to answer questions and re-direct participants who were talking with one another or otherwise distracted from filling out questionnaires. In some cases, participants were re-seated to improve privacy and minimize distractions.

Immediately preceding the start of the survey, project staff briefly re-oriented students to the general purpose of the project, reiterated that their responses would remain confidential, and clearly stated that participants were permitted to skip questions that they chose to not answer or discontinue the survey at any time. Participants who were absent during the designated test day at their school completed the survey during one of multiple make-up days decided by school administrators and project staff; all make-up days were conducted within three weeks of the initial questionnaire administration day. A small gift (candy) was provided to students as they turned in their questionnaire packet to staff, in appreciation of their participation.

As in previous administrations, participants were presented with a booklet containing sociometric items and self-report measures of psychological and social functioning. Each questionnaire was preceded by written instructions appropriate for

the measure, with any unusual or particularly important directions highlighted. Participants were invited to ask project staff for clarification of questionnaire instructions or individual items. Additionally, participants were given specific verbal and written instructions for questionnaires indicating responses about romantic partners, as these items appeared slightly different from questions about romantic partnerships in prior questionnaire packets. Whitney Guerry or a research assistant familiar with these questionnaires provided these instructions.

2.4 Measures

Participants reported the type of their most serious romantic partner (described below) and length of this relationship (romantic partner affiliation) at Time 1. Romantic partner influence modes, including pressure/encouragement, teasing/criticism, compliments, modeling, and appearance conversations, were assessed at Time 1. Weight-related attitudes and behaviors were measured at Time 1 and Time 2.

2.4.1 Romantic partner influence measures

Romantic partner affiliation. The definition of “romantic relationship” presented to participants was informed by recent literature on romantic relationships in adolescence (e.g., Furman & Collins, 2009) and by feedback obtained during a focus group with 10th grade students in September 2010 at one of the participating high schools. Information gathered at a focus group conducted in March 2010 indicated that adolescents within

this sample are involved in a range of romantic relationships that vary along dimensions of seriousness and duration. Based on feedback from the September 2010 focus group, romantic partnerships were grouped into four primary categories: boyfriend/girlfriend, dating partner, “hanging out” partner, and “talking to” partner. ‘Boyfriend/girlfriend’ was considered the most serious type, defined as a relatively stable, committed, and often exclusive relationship partner. A ‘dating partner’ was defined as a person with whom an adolescent spends a considerable amount of time in dyadic activities, but is not considered as serious (nor perhaps as exclusive) as a boyfriend/girlfriend. A “‘hanging out’” partner’ was defined as less serious than a ‘dating partner’ and as someone with whom an adolescent spends time, but often in the presence of other friends. A “‘talking to’” partner’ was defined as a person whom an adolescent is romantically interested in and talking to, either on the phone or in person, but not yet hanging out with.

All romantic partner questions were placed at the end of the questionnaire packet presented to participants. This ordering of the packet was intended so as to foster understanding of these questionnaire instructions (which were slightly different than previous questionnaire instructions) and to focus participants on thinking about their most important romantic partner as identified across a range of romantic partner types, and not solely on a boyfriend or girlfriend. Participants were asked to identify

whether they had any romantic partners within the four categories described above. Additionally, participants were provided with the option to specify any other type of romantic partner and to respond to questionnaire items about this partner.

Immediately following the adolescents' endorsement of romantic partners, participants were prompted to indicate the length of each affiliation/relationship (e.g., "How long have you been "talking" with, dating, hanging out with, or involved in a romantic relationship (boyfriend/girlfriend)) with this person?"). Participants were asked to indicate the length of the relationship in number of years, months, and weeks, and responses were converted to weeks in duration. Participants were also asked to indicate the number of people within each category they had a relationship or affiliation with in the past 6 months. Following questions about each romantic partner category, participants were prompted to write the name of their most serious romantic partner from the past 6 months, according to the serious rankings established through focus group discussions. Instructing participants to write the name of this person was intended to cue the participant to focus on their most serious romantic partner and not on a less-serious partner from the time period specified. Participants were clearly instructed to complete all romantic relationship measures about the one person they identified as a most serious romantic partner in the past 6 months.

For the purposes of analyses, a “romantic partner type” variable was computed to weight the romantic affiliation according to the seriousness of the relationship. As a result of focus group feedback, boyfriend/girlfriend affiliations were weighted as the most serious type of relationship (and given a value of 5), dating partner relationships were given a value of 4, “hanging out” relationships were given a value of 3, and “talking to” relationships were given a value of 2. A “romantic partner affiliation” variable was computed as the product of two dimensions: the length of the relationship (in weeks) and the seriousness of the relationship. Thus, relationships rated more serious and longer in duration were assigned the most weight in analyses, and relationships rated less serious and shorter in duration were afforded less weight.

Teasing/criticism. Male and female participants completed two separate but parallel appearance-related punishment scales for their romantic partner. For girls, a 9-item appearance-related punishment scale was comprised of two subscales: frequency of teasing (5 items) and frequency of other criticism (4 items). This scale was compiled for the current research but was predominantly composed of items taken from existing instruments or closely adapted from these instruments. The teasing subscale included two items measuring frequency of teasing specific to thinness/overweight (e.g., “This person teases me or makes fun of me because I am not thin enough”) and two general appearance-related teasing items (e.g., “This person makes fun of aspects of my physical

appearance"). Teasing items were adapted from the Appearance Teasing Questionnaire (Jones & Crawford, 2006; Jones et al., 2004), the Pressure to be Physically Attractive Questionnaire (PPAQ; Shomaker & Furman, 2008) and the Perception of Teasing Scale (POTS; Thompson, Cattarin, Fowler, & Fisher, 1995). The other appearance-related criticism subscale was composed of two items specific to thinness/overweight (e.g., "This person criticizes me for not being thin enough") and two items regarding general appearance-related criticism (e.g., "This person makes negative comments about my physical appearance"). Three appearance criticism items were adapted from the Pressure to be Physically Attractive Questionnaire (PPAQ; Shomaker & Furman, 2008), and one item was developed for the current study ("This person says things that make me feel like I'm not thin enough"). The mean of scores from each item on this measure was used in analyses. Reliability for this scale at Time 1 ($\alpha = .90$) was good.

Boys completed a similar 9-item appearance-related punishment scale comprised of two subscales: frequency of teasing (5 items) and frequency of other criticism (4 items). This scale included the same general appearance-related teasing and general appearance-related criticism items included in the scale for females, but thinness/overweight items were replaced with muscularity items (e.g., "This person makes jokes about me being too skinny (not muscular enough)", "This person criticizes me for not being muscular enough"). Muscularity-specific items were closely adapted

from existing instruments assessing teasing and criticism. Across both scales, item responses ranged from 1 (never) to 5 (very often). Items from the teasing and criticism subscales were averaged to derive an “appearance-related punishment” scale for girls and for boys. At Time 1, reliability for this scale at Time 1 ($\alpha = .83$) was good.

Compliments. To assess frequency of received compliments related to appearance, male and female participants completed separate but analogous 5-item scales for romantic partners. For females, this 5-item Female Appearance Compliments Scale was composed of three items measuring the frequency of received compliments about thinness (e.g., “This person compliments me when I look thin”), adapted for the current study from the Pressure to be Physically Attractive Questionnaire (PPAQ; Shomaker& Furman, 2008). This scale was also composed of two items measuring frequency of received compliments related to general appearance, created for this study (e.g., “This person tells me I look good”). Males completed a similar 5-item scale (Male Appearance Compliments Scale), comprised of the same two general appearance compliments items, and three items pertaining to muscularity-specific compliments (e.g., “This person compliments me when I look ‘built’ and toned”) adapted from the PPAQ (Shomaker& Furman, 2008). Item responses range from 1 (not at all) to 5 (almost always/the most). A mean score was derived from individual items for separate female and male versions of the Appearance Compliments Scale- Romantic partner. For girls,

reliability of this scale was good at Time 1 ($\alpha = .73$). Internal consistency of the male version of this scale was slightly better ($\alpha = .87$).

Modeling. To measure modeling of body dissatisfaction, male and female participants completed three identical items from the Pressure to be Physically Attractive Questionnaire (PPAQ; Shomaker & Furman, 2008) assessing participants' perceptions of their romantic partners' body dissatisfaction (e.g., "This person doesn't like the way he/she looks"). The response scale ranged from 1 through 5, with higher responses indicating greater perceived body dissatisfaction in the romantic partner. For analyses, the mean of these items was computed to indicate romantic partner modeling of body dissatisfaction. For boys at Time 1, reliability of the scale was good ($\alpha = .90$). Reliability was marginal for girls ($\alpha = .64$).

Pressure/encouragement (exploratory mode). Five items assessed the frequency with which adolescents reported being pressured by their romantic partner to engage in behaviors aimed to achieve thinness (girls), and five analogous items measured the frequency with which adolescents report being pressured by their romantic partner to engage in muscle-gaining behaviors (boys). These items were modified from existing items assessing pressure to be thin or to be muscular from peers (Jones & Crawford, 2006; Jones et al., 2004; Stice & Bearman, 2001). Items included "This person says I should exercise more to lose weight" and "This person says I should exercise more to

gain bulk". Responses were rated on a 5-point Likert scale (1 = never; 5 = very often), and item responses were averaged to produce separate pressure/encouragement scale for weight-loss behaviors and for muscle-striving behaviors. Internal consistency of this scale for boys was marginal at Time 1 ($\alpha = .65$). The internal consistency of the scale for girls was adequate at Time 1 ($\alpha = .73$).

Appearance Conversations (exploratory mode). The frequency of participants' conversations about body and appearance with romantic partners was assessed with a slightly modified brief questionnaire developed by Jones and colleagues (Appearance Conversations Questionnaire; Jones, 2004; Jones et al., 2004, Jones & Crawford, 2006). Both boys and girls were instructed to respond to items related to talk with their romantic partner about general body appearance (4 items; e.g., "This person and I talk about what we can do to look our best"). Additionally, girls completed items related to conversations about weight-loss behaviors (4 items; e.g., "This person and I talk about losing weight") and boys completed parallel items about muscle-gain behaviors (4 items; e.g., "This person and I talk about building our muscles"). Across items, responses were rated on a scale from "1" (never) to "5" (very often), and items were averaged to derive an appearance conversations subscales. Internal consistency for boys ($\alpha = .81$) and girls ($\alpha = .84$) was acceptable.

2.4.2 Weight-related attitude and behavior measures

Body dissatisfaction. To obtain a measure of dissatisfaction related to thinness (for girls) and muscularity (for boys), participants completed gender-specific measures of The Ideal Body Subscale (IBS; Cogan et al., 1996). Female participants completed a version depicting 12 female silhouettes ranging in size from very thin to very obese (IBS-Female; Cogan et al., 1996). Using numbers corresponding to each silhouette, participants were asked to indicate their current perceived body size, their ideal body size, and the body size they perceived to be the most attractive by the opposite sex. As an index of girls' body dissatisfaction, a discrepancy score was computed for each female adolescent by subtracting adolescents' reports of ideal body size from actual body size. Higher discrepancy scores indicated higher levels of thinness-related dissatisfaction. Boys completed the Ideal Body Subscale–Male (Cogan et al., 1996), which consists of a similar set of 12 silhouettes ranging in size from very thin to very muscular. Male participants also indicated their perceived actual and ideal body size. As with girls, higher levels of boys' discrepancy scores on this measure indicated higher levels of dissatisfaction related to muscularity.

Dieting (girls). Girls' weight-loss behaviors were measured with the Dutch Restrained Eating Scale (DRES; Van Strien, Frijters, Bergers, & Defares, 1986), a well-established 10-item measure of dieting behavior. Sample items include "How often do

you try not to eat between meals because you are watching your weight?" Responses are made on a 5-point Likert scale (1 = never; 5 = always). Item responses were averaged to create a dieting scale score, with higher scores reflecting higher levels of dieting behaviors. For girls, the internal consistency of this scale at Time 1 was .95 and at Time 2 was .97.

Muscle-building (boys). Boys' engagement in muscle-gaining strategies was assessed by two items adapted from a muscle-building techniques scale developed by Smolak, Murnen, and Thompson (2005). Adolescents were asked to report the frequency of their own engagement in lifting weights and consuming weight-gain supplements (e.g., powders) over the past 28 days, with Likert-style response options ranging from "never" to "always". An index of muscle-gaining behaviors was obtained by computing the average of these two items. The reliability of this measure was poor at Time 1 ($\alpha = .50$) and adequate at Time 2 ($\alpha = .73$).

Exploratory weight-related outcome: Drive for muscularity (boys). Desire for muscularity was assessed with 6 items from the 15-item Drive for Muscularity scale (DMS; McCreary & Sasse, 2000). The DMS is a measure of an individual's perception that he/she is not muscular enough and that he/she should increase muscle mass (bulk). Adolescents were asked to indicate the degree to which attitudes and behaviors describe themselves on a 6-point Likert scale (1 = never; 6 = always). Adequate reliability and

validity of the complete scale in college-aged samples has been demonstrated (McCreary, 2007). For the current study, items were selected that were considered to be appropriate for middle-adolescent boys and girls. A sample item is “I think I would feel more confidence if I had more muscle mass.” For analyses, a factor analysis indicated one underlying factor structure within the items included in this research. The reliability for this measure at Time 1 was .94 and .92 at Time 2.

Exploratory weight-related outcome: Drive for thinness (girls). Adolescents also completed the Drive for Thinness Scale of the Eating Disorders Inventory (EDI-DT; Garner, Olmstead, & Polivy, 1983), a seven-item subscale, to measure extent of preoccupation with body weight, excessive concern with dieting, and intense fear of becoming overweight. The 6-point Likert scale ranges from 1 (never) to 6 (always). Prior research has shown that this subscale has good reliability and validity (e.g., Gilbert & Meyer, 2005). In the current sample (girls only), the Time 1 alpha coefficient was .87 and the Time 2 alpha coefficient was .85.

Body Mass Index (BMI). Adolescents reported their height and weight at Time 1. These data were deemed accurate estimates, as evidence suggests that self-reported weight and height, and actual measured weight and height values are highly correlated (Himes, Hannan, Wall, & Neumark-Sztainer, 2005). Adolescent-reported weight and height were used to compute body mass index (BMI kg/m²). BMI-by-age percentiles

were determined using the CDC BMI-for-age growth charts for boys and girls. This method is considered a more appropriate indicator of weight-to-height ratios in youth under age 20. Within this sample, 2% of girls and 5% of boys fell within the underweight category (below the 5th percentile for age), 70% of girls and 69% of boys were considered healthy weight (between the 5th and 85th percentile for age), and 27% of girls and 26% of boys fell within the overweight category (above the 85th percentile for age).

2.5 Analytical Plan

Prior to examination of any study hypotheses, means and standard deviations were computed for each of the predictor and dependent variables to detect outliers and kurtosis and skewness of the sample. For each construct, factor analysis was conducted on items selected from multiple existing instruments, to determine whether these items collectively assessed a single factor. This analysis indicated that items from all measures loaded on single factors for each construct. All preliminary analyses indicated that variable distributions and scales were adequate for analyses.

Next, Pearson correlations were conducted to examine interrelations among all variables. To examine the hypothesis that girls, compared to boys, will report greater perceptions of peer influence of body-related behaviors across all three primary modes, t-tests were conducted on all influence mode variables. In addition, t-tests were

employed to examine gender differences in all behaviors and attitudes included in the study.

To address the main study hypotheses regarding the effects of various modes of dyadic partner influence on weight-related behaviors and body dissatisfaction over time, two path analyses (separate by gender) were conducted using structural equation modeling and full information maximum likelihood as implemented in Amos version 20.0.0 (Arbuckle, 1999). Although hypothesized associations could be examined by multiple hierarchical multiple regression models (separated by gender), a path analysis permitted more stringent examination of all hypothesized associations while accounting for covariation across predictors and outcomes and multiple observed associations.

3. Results

3.1 *Preliminary Analyses*

3.1.1 **Descriptive statistics for romantic affiliation**

A total of 248 participants (81.8% of the total sample of 303 participants at this time point) reported having a romantic partner of one of four types (boyfriend/girlfriend, dating partner, “hanging out” partner, and “talking to” partner) at Time 1 in Fall 2010 (see Table 2). At Time 2 six months later, 214 (86.3%) of these participants were available for testing. Of the 214 participants who identified a romantic partner at Time 1 and were retained in the sample at Time 2, 165 (77.1%) reported that their most serious romantic partner was a boyfriend or girlfriend, 20 (9.3%) identified that their most serious partner was a dating partner, 25 (11.7%) reported a “hanging out” partner as their most serious, and 4 (1.9%) reported that their most serious partner was someone they were “talking to”. Although participants were provided with the opportunity to indicate a relationship partner in another category, no participants reported that a partner in the “other” category was their most serious partner, and thus no questionnaire items were completed in regards to a partner in this category.

At Time 2, 191 of these participants reported having a romantic partner in the time interval since the last data collection. Eighteen participants reported no romantic partner, and 5 participants did not provide information about their romantic

partnerships during this time interval. Of those who indicated that they did have a romantic partner at Time 2 (N=191), 63 (33.0%) nominated the same romantic partner they indicated at Time 1, 67 (35.1%) nominated a different partner, 36 (18.8%) could not remember whether they nominated the same partner, and 25 (13.1%) did not provide this information. At this data collection, 153 (80.1%) participants reported that a boyfriend or girlfriend was their most serious romantic partner, 17 reported that a dating partner was their most serious (8.9%), and 21 (11.0%) reported that a “hanging out” partner was their most serious. No participants indicated that a “talking to” partner was their most serious romantic partner during this interval. The majority of participants reported that their most serious romantic partner was of the opposite sex at Time 1; 3 male participants reported a same-sex partner and 4 female participants reported a same-sex partner. The data for these participants were not included in the current analyses. Of note, there were no significant differences in any correlational or path analyses whether these participants were included in or excluded from the sample.

3.1.2 Descriptive statistics for primary variables

Table 3 includes means and standard deviations for all primary study variables. *t*-Tests revealed significant gender differences in adolescents’ report of pressure from a romantic partner to look thin (girls) or muscular (boys) at Time 1, such that boys reported higher levels of perceived pressure compared to girls. Contrary to hypothesis,

no other significant gender differences in influence modes were observed. Additionally, *t*-Tests indicated that all weight-related outcome variables were significantly different by gender, consistent with prior literature: girls reported more thin-seeking behaviors and attitudes, and boys reported more muscle-gaining behaviors and attitudes. There were no significant gender differences for body dissatisfaction. As shown in Table 3, the base rates for all criterion variables were relatively low.

3.1.3 Correlation analyses

Pearson correlations were also computed separately for girls and boys to examine bivariate associations between continuous variables (see Tables 4 and 5). For girls, several concurrent Time 1 associations were found between influence modes and attitude/behavior variables. Teasing/criticism and pressure were positively associated with body dissatisfaction. Pressure at Time 1 was also positively associated with dieting and drive for thinness at Time 1. Also for girls, appearance conversations were concurrently and positively associated with dieting and drive for thinness.

Pearson correlations between influence variables at Time 1 and outcome variables at Time 2 also indicated significant longitudinal associations for girls. Results suggested that higher levels of pressure at Time 1 were significantly and moderately associated with higher levels of body dissatisfaction, dieting, and drive for thinness at Time 2, and more reported appearance conversations were associated with higher drive

for thinness at Time 2. Unexpectedly, there was no association between BMI percentile at Time 1 and any of the outcome variables, including body dissatisfaction. Given this lack of association, BMI percentile was not included (i.e., controlled for) in subsequent analyses. Significant concurrent associations were revealed between influence modes at Time 1 in anticipated directions. Although the correlation between teasing/criticism and pressure was high ($r = .71, p < .001$), these two influence modes were not combined for longitudinal analyses, as they were believed to be sufficiently conceptually distinct.

For boys, correlation analyses also revealed moderate significant associations between influence and attitude/behavior variables at Time 1. Compliments were negatively associated with concurrent levels of body dissatisfaction and positively associated with concurrent levels of muscle-gain behaviors. Modeling was concurrently negatively associated with muscle-gaining behaviors. Pressure from a romantic partner was concurrently and positively associated with muscle-gain behaviors and drive for muscularity at Time 1.

For boys, Pearson correlations between influence variables at Time 1 and outcome variables at Time 2 also indicated significant longitudinal associations. Higher levels of compliments at Time 1 were moderately associated with lower levels of body dissatisfaction and higher levels of muscle-gain behaviors at Time 2. Additionally, more pressure at Time 1 was associated with higher levels of muscle-gain behaviors and

higher levels of drive for muscularity at Time 2. More engagement in Time 1 appearance conversations was also associated with more muscle-gain behaviors six months later. As for girls, because there was no association between BMI percentile and any outcome variables (including body dissatisfaction), this variable was dropped from main study analyses.

Results from correlation analyses indicating a strong association between Time 1 levels of teasing/criticism and pressure for both boys and girls suggested that subsequent longitudinal analyses (i.e., path analyses) should be examined for suppression effects. Other research examining multiple predictors of outcome variables has suggested that suppressor effects are more likely in models with strong associations between predictors (Cohen, Cohen, West, & Aiken, 2003).

3.2 Path Analyses

3.2.1 Path analyses for girls

Consistent with hypotheses, initial path analyses were conducted separately for male and female participants. For girls, the path analysis included all primary and exploratory influence variables at Time 1 (teasing/criticism, compliments, modeling, pressure, and appearance conversations), romantic partner affiliation at Time 1, all three weight-related behaviors and attitudes at Time 1 (body dissatisfaction, dieting, and drive for thinness), and the interaction terms between romantic partner affiliation and

each influence mode. Time 2 weight-related constructs were also included in the model. Paths were estimated between each Time 1 influence mode and each Time 2 weight-related construct and between interaction terms at Time 1 and Time 2 outcomes. Autoregressive paths were included between Time 1 and Time 2 weight-related behavior/attitude constructs. All exogenous variables were allowed to covary. In sum, this model examined hypothesized associations between predictor and outcome variables while controlling for expected continuity in behaviors and attitudes between Time 1 and Time 2.

The fit of this initial model was poor, $\chi^2(5) = 72.36$, $\chi^2/df = 14.47$; CFI = .92, RMSEA = .34. Because it was hypothesized that the multiple outcomes shared method variance, Time 2 error terms were allowed to correlate in a subsequent model. The fit of this model was significantly improved, $\chi^2(2) = 2.80$, $\chi^2/df = 1.42$; CFI = .99, RMSEA = .06. Improvement in the model was examined using a chi-square difference test, $\Delta\chi^2(3) = 69.56$, $p < .001$. Additionally, in an effort to increase parsimony of the model, nonsignificant paths ($p > .80$) were trimmed. The fit of this adjusted model did not significantly change, model fit remained good, $\chi^2(6) = 3.1$, $\chi^2/df = .52$, CFI = 1.00, RMSEA = .00. This was considered the final model, as it exhibited both good fit and improved parsimony.

Table 6 displays the standardized estimates for statistically significant effects within this final path model for girls. Results from this analysis indicated that after accounting for covariation with all other exogenous predictors (and controlling for initial levels of the outcome variables), higher levels of teasing at Time 1 were associated with lower levels of Time 2 drive for thinness, and higher levels of pressure from a romantic partner at Time 1 were longitudinally associated with higher levels of drive for thinness at Time 2. However, two characteristics of these associations suggested the presence of a suppression effect involving teasing/criticism and pressure at Time 1. First, without other predictors in the model (i.e., based on the Pearson correlation coefficient computed prior to the path analysis), the association between teasing/criticism at Time 1 and drive for thinness at Time 2 was positive. Because the final coefficient for teasing/criticism was of an opposite sign from this correlation with drive for thinness, it is very likely that teasing/criticism was a net (or negative) suppressor. Additionally, teasing/criticism had a very small correlation with drive for thinness, suggesting classical suppression (Gaylord-Harden, Cunningham, Holmbeck, & Grant, 2010). Given suppression effects from teasing/criticism, the predictive validity of pressure was improved. Thus, the associations between teasing/criticism and drive for thinness, and between pressure and drive for thinness, were interpreted in light of this suppression effect. In spite of a statistically significant association, the relationship

between teasing/criticism and drive for thinness is not deemed practically significant (Tzelgov & Henik, 1991).

Results for the path analysis also revealed that for girls, higher levels of pressure from a romantic partner in the Fall were associated with higher levels of dieting 6 months later. Higher levels of modeling at Time 1 were associated with lower levels of body dissatisfaction at Time 2. These main effects were interpreted, as no indicators of suppression were present.

Additionally, the interaction between Time 1 romantic partner affiliation and Time 1 teasing was a significant predictor of Time 2 body dissatisfaction, such that experiencing higher levels of teasing from a more serious romantic partner at Time 1 was associated with higher levels of body dissatisfaction at Time 2 than for girls who reported a moderately serious romantic partnership at Time 1. For girls who reported least serious romantic partnerships at Time 1, there was no association between teasing in the Fall and body dissatisfaction in the Spring (see Figure 1).

3.2.2 Path analyses for boys

For boys, the path analysis included all primary and exploratory influence variables at Time 1 (teasing/criticism, compliments, modeling, pressure, and appearance conversations), romantic partner affiliation at Time 1, all three weight-related behaviors and attitudes at Time 1 (body dissatisfaction, muscle-gaining behaviors, and drive for

muscularity), and the interaction terms between romantic partner affiliation and each influence mode. Time 2 weight-related constructs were also included in the model. Paths were estimated between each Time 1 influence mode and each Time 2 weight-related construct and between interaction terms at Time 1 and Time 2 outcomes. Autoregressive paths were included between Time 1 and Time 2 weight-related behavior/attitude constructs. All exogenous variables were allowed to covary.

The fit of this initial model was poor, $\chi^2(3) = 7.43$, $\chi^2/df = 2.48$; CFI = .99, RMSEA = .13. To improve both model fit and parsimony, nonsignificant paths ($p > .80$) were trimmed from the model. The fit of this trimmed model was not significantly different than the initial model, but it did exhibit adequate model fit statistics, $\chi^2(5) = 7.45$, $\chi^2/df = 1.49$; CFI = .99, RMSEA = .07 and represented a more parsimonious model.

Table 7 displays the standardized estimates for statistically significant effects within the final path model for boys. After accounting for covariation with all other exogenous predictors (again, this includes controlling for initial levels of the outcome variables), higher levels of compliments from a romantic partner at Time 1 were associated with higher levels of muscle-gaining behavior at Time 2. Additionally, two moderation effects were significant. At Time 1, higher levels of teasing/criticism from a more serious romantic partner was associated with lower levels of drive for muscularity at Time 2 compared to boys who reported that their relationship with their romantic

partner was moderately serious. Interestingly, for boys who reported the least serious romantic partnerships, higher levels of teasing/criticism at Time 1 was associated with *higher* levels of Time 2 drive for muscularity (see Figure 2). Further, for boys reporting the least serious romantic partnerships at Time 1, higher levels of appearance conversations at Time 1 were associated with higher levels in Time 2 drive for muscularity compared to boys who reported moderately serious romantic partnerships at Time 1. For boys who reported the most serious romantic partnerships in the Fall, more appearance conversations in the Fall were associated with *lower* levels of drive for muscularity in the Spring (see Figure 3).

3.2.3 Additional exploratory analyses

Additional analyses were conducted to further evaluate possible reasons for no significant association between BMI percentile and outcome variables. Given that prior research has demonstrated racial differences in patterns of association between body mass index and body dissatisfaction (Wilkosz, Chen, Kennedy, & Rankin, 2011), separate correlational analyses between Time 1 BMI percentile and Time 2 outcome variables (body dissatisfaction, drive for thinness or muscularity, and dieting/muscle-gaining behavior) were conducted for African American and White adolescent girls and boys.

For African American girls, the association between Time 1 BMI percentile and Time 2 body dissatisfaction was significant and negative ($r = -.51, p < .02$), indicating that a higher BMI percentile at Time 1 was associated with decreases in body dissatisfaction at Time 2. No significant correlations were detected for either dieting or drive for thinness for African American girls. In contrast, for White girls, the correlation between Time 1 BMI percentile and Time 2 body dissatisfaction was significant and positive ($r = .30, p < .05$), revealing an opposite pattern. For White girls, higher BMI percentile in the Fall was associated with higher body dissatisfaction in the Spring. As for African American girls, there were no significant associations for White girls between BMI percentile and dieting or drive for thinness.

When analyzed separately by racial group, there were no significant correlations between BMI percentile and any of the three outcome variables for boys (body dissatisfaction, muscle-gaining behavior, and drive for muscularity).

4. Discussion

The purpose of the current study was to further understand the multiple modes and mechanisms through which romantic partners may influence weight-related attitudes and behaviors in adolescent boys and girls. During a developmental period characterized by both increased risk for body dissatisfaction and unhealthy weight-related behaviors (Croll, Neumark-Sztainer, Story, & Ireland, 2002; Ricciardelli & McCabe, 2004), and heightened attention to romantic relationships (Hazan & Zeifman, 1994), it is critically important to identify the ways in which romantic partners may affect appearance-related health. Although a growing number of empirical studies have addressed peer influence effects on appearance within dyadic friendships or larger groups of adolescent peers (e.g., Rancourt & Prinstein, 2010), only a handful have investigated appearance-related influences within dyadic romantic relationships (e.g., Shomaker & Furman, 2009, 2010). Importantly, no studies have explicitly examined whether characteristics of the adolescent partnership may play a role in the influence process.

Guided by social rewards and social norms theories of peer influence, this prospective study aimed to examine gender-specific hypotheses for three primary

influence modes (criticism/teasing, compliments, and modeling) and two exploratory modes (pressure and appearance conversations) in a diverse sample of 11th grade adolescents over a 6-month period. Outcome variables were selected to be consistent with gender-relevant weight and shape concerns and behaviors. In addition to an exploration of conceptually distinct influence modes, this study also aimed to investigate the seriousness and length of the romantic partnership as a moderator of observed influence effects. It was expected that influence emanating from more serious, longer romantic relationship partners would have a greater effect on changes in appearance-related health. Overall, results indicate that both boys and girls experienced weight-related influence from a most serious romantic partner, with some differences by gender and influence mode.

Surprisingly, findings suggest that when influence modes are matched to be focused on gender-relevant attitudes and behaviors—muscle-gaining for boys and thin-seeking for girls-- boys and girls notice similar frequencies of teasing/criticism, modeling, compliments, and appearance conversations in their romantic partners. Boys perceive greater pressure to look more muscular or more built from their partners than girls perceive pressure to look more slender. This may suggest that girls consider encouragement of muscularity to be more socially acceptable—or perhaps less detrimental-- than boys deem similar pressure to be thin. Indeed, both empirical

research and popular media has clearly implied that social pressures to be thin have negative (unhealthy) effects for girls (e.g., Field et al., 2001; Stice, 1998, 2002), but no parallel data has communicated similar messages for pressures to be muscular.

Motivated by an urgent push to identify risk factors for eating disorders, the literature has collected significantly more support for social influence on girls' weight-loss efforts and attitudes. Accumulating recent work, however, has indicated a similarly critical need to identify precursors and precipitants to muscle-gaining behaviors in boys (Cafri et al., 2005). Given that boys reported equal or *greater* perceptions of weight-related influences from their partners, compared to girls, future research should certainly continue to examine the romantic partner context as a source of risk for boys' engagement in muscle-gaining behaviors (see also Shomaker & Furman, 2010).

The current study hypothesized that romantic partner influence effects are explained by two primary mechanisms—social norms and social rewards—and executed through five distinct influence modes. Indeed, Pearson correlations revealed that for both boys and girls, these modes are sufficiently different from one another, representing slightly different yet theoretically discernible influence constructs. Findings from path analyses across both genders indicate some support for all five influence modes, and the direction of significant effects suggests that social rewards and social norms both function to increase and decrease behaviors over time.

First, findings reveal that teasing and criticism--conceptualized as a form of appearance-related social *punishment* and considered a type of social reinforcement-- is an important influence mode for both boys and girls. Although a suppression effect for teasing/criticism emerged in the prediction of drive for thinness for girls, more teasing from a more affiliated romantic partner (i.e., a combination of a longer relationship and more serious relationship) at Time 1 was associated with greater increases in body dissatisfaction six months later, compared to girls reporting less affiliation with their romantic partners. This finding extends prior research demonstrating a relationship between general weight-related teasing in adolescent girls and subsequent body dissatisfaction (Thompson, Covert, Richards, Johnson, & Cattarin, 1995; Wertheim, Paxton, & Blaney, 2004).

More interesting and surprising, however, is that an interaction between teasing and romantic partner affiliation was also identified for boys, but with different implications for a gender-relevant outcome variable. For boys in this sample reporting the highest romantic affiliations, more teasing/criticism was associated over time with larger *decreases* in drive for muscularity compared to boys who reported moderate affiliations with their romantic partners. Further, for boys who reported the least affiliative romantic partnerships, higher initial levels of teasing/criticism were linked to *increases* in drive for muscularity six months later. For girls, teasing from a more serious

and/or a more established romantic partner has detrimental effects on weight-related health. Indeed, evidence from studies of adult heterosexual relationships indicates that women experience greater negative affect as a result of teasing from their romantic partner (e.g., Keltner, Young, Heerey, Oemig, & Monarch, 1998), and it seems probable that these negative effects may be compounded for girls in relationships of longer duration. For boys, in contrast, it is the least affiliative relationships that seem to exert the more negative effects on weight-related attitudes over time. Although speculative, it is possible that boys involved in less serious or shorter relationships at Time 1 are particularly sensitive to muscularity-related teasing/criticism from a romantic partner, and may perceive this as important appearance feedback. These findings underscore the importance of both the relationship context from which teasing and appearance-related criticism emerges, and the role of gender in interpreting this context.

Appearance compliments were also conceptualized as a form of social reward: compliments verbally reinforce romantic partners' preferred shape and weight, theoretically increasing the likelihood that adolescents will strive to either maintain or enhance their appearance in directions consistent with their romantic partners' comments. Interestingly, compliments were not a significant mode of romantic partner influence for girls. For boys, however, perceptions of compliments from their most serious romantic partner in the fall were associated with increases in muscle-gaining

behaviors in the spring. In a sample of slightly older adolescents, Shumaker and Furman (2010) found a similar association between compliments and encouragement measured with the PPAQ and later pursuit of muscularity. Consistent with principles of positive reinforcement, it appears that positive muscularity-related feedback functioned to promote the behaviors associated with this physique. It is unexpected that the same principles did not promote increases in girls' thin-striving behaviors, as previous work has found that compliments related to thinness are significantly associated with changes in disordered eating behaviors over time (Shomaker & Furman, 2009). It is possible that the relatively low base rate of thin-striving behaviors (dieting) in this sample prevented detection of this effect. Future research should continue to examine a romantic partner reinforcement mechanism for girls, perhaps with a different index of thin-seeking behavior (e.g., increases in aerobic exercise).

Pressure and encouragement, operationalized in this study as comments directly communicating romantic partners' preferences for weight or shape, was considered a social norms mode. Overt expressions of desirable appearance (e.g., "This person says I should exercise more to lose weight") were hypothesized to clearly communicate the norms, or standards, for appearance within a dyadic relationship. In this study, pressure/encouragement was a significant predictor for girls only: more perceived pressure at Time 1 was associated over time with increases in girls' drive for thinness

and dieting behavior. This is consistent with findings for girls from Shomaker and Furman (2009), who found that both criticism and pressure were longitudinally associated with increases in disordered eating for girls. It is also broadly consistent with past research suggesting that adolescent girls' perceptions of more broadly defined "pressure" to be thin from the peer environment is longitudinally linked to higher levels of unhealthy attitudes about weight (e.g., Stice & Bearman, 2001). However, prior investigators have largely measured "pressure to be thin" by asking adolescents to measure the amount of pressure they feel to lose weight, or combining a measurement of "pressure" with other modes, such as teasing or compliments. The current finding provides considerably more precise information about the isolated effects of pressure and encouragement on an attitude (drive for thinness) and behavior (dieting) for girls.

This study operationalized modeling as a second form of the social norms mechanism. This mode was only relevant for girls, and in the opposite direction expected. Greater perceived romantic partner modeling of body dissatisfaction (i.e., the perception that one's romantic partner was more dissatisfied with his body at Time 1) was associated with *decreases* in girls' body dissatisfaction six months later. Consistent with the idea that adolescents are motivated to match the behavioral and attitudinal norms of their intimate and valued peers (Abrams & Hogg, 1990; Festinger, 1954), it was expected that girls who observed that their partner was more dissatisfied with his body

in the fall would demonstrate commensurate decreases in their own body satisfaction over time. However, the direction of this finding may be better explained by a downward social comparison effect rather than a social norms mechanism. Social comparison theory posits that individuals seek comparisons with others for purposes of self-evaluation, self-improvement, and self-enhancement, and this evaluation of the self is effectively gained through comparison with similar others on relevant dimensions (Festinger, 1954). Within dyadic partnerships with an opposite-sex partner—for whom direct comparison of physical attributes is less straightforward—it is possible that girls may be more prone to comparing their *feelings about* their physical appearance to those of their opposite-sex romantic partner. If girls perceive that their romantic partner is less satisfied with his body than they are (a downward social comparison), this would theoretically result in increases in positive affect and self-esteem (e.g., Major, Testa, & Bylsma, 1991). In this study, these increases in self-esteem may be manifest as decreases in body dissatisfaction, or increases in body satisfaction, over time.

However, it should also be noted that the operational definition of modeling used in the current study may not have been a particularly apt representation of this concept. Although for girls, perceptions of same-sex peers' concern with thinness has been found to be concurrently associated with dieting behavior (Hutchinson & Rapee, 2007), no prior research has considered body dissatisfaction in an opposite-sex romantic

partner as an attitude that can be modeled as it has been proposed here. Indeed, it may be that modeling of weight-related attitudes and behaviors occurs best between same-gender peers (e.g., within best friend pairs or within a group of same-gender friends).

Although appearance conversations with a romantic partner may contain multiple influence mechanisms, discussions about appearance modification strategies and the importance of weight and shape may be a powerful mode through which norms for appearance are developed and communicated between partners (Jones, Vigfusdottir, & Lee, 2004). To date, appearance conversations, including “fat talk”, have been investigated only within dyadic friendships or same-sex friendship groups. Within this sample, appearance conversations with a romantic partner were significant for boys but not girls, and only when considered in the context of romantic partner affiliation. Boys with the least affiliative romantic partnerships and more frequent appearance conversations at Time 1 experienced greater increases in drive for muscularity compared to boys who reported partnerships of only moderate affiliative strength. In contrast, the direction of the relationship between more appearance conversations and subsequent increases in drive for muscularity was reversed for boys who reported the most serious romantic partnerships in the Fall. This pattern again underscores the need to consider how the dyadic relationship context may differentially impact influence modes. For newer relationships with no clear appearance norms, perhaps these conversations are

important opportunities for boys to learn the preferences and expectations of their partners and shape their attitudes in accordance with these norms.

4.1 Limitations and future directions

Although this study has several methodological strengths and provides important contributions to romantic partner influence literature, several limitations should be addressed in future research. First, analyses indicated questionable reliability for the measure of modeling for girls ($\alpha = .64$), and for the measure of pressure/encouragement for boys ($\alpha = .65$). It was a particular challenge of this research to locate brief yet reliable measures of relevant behaviors and attitudes. Future research should select questionnaires with an improved balance between brevity and psychometric quality.

The current study relied exclusively on adolescents' perceptions of their romantic partners' engagement in each influence mode, and did not include romantic partners' own reports of their influence behaviors. Although this study design characteristic did effectively maximize the total size of the sample, inclusion of only adolescents' perceptions limited our full understanding of romantic partner influences in this domain. Recent peer influence research has indicated that adolescents' reports, or perceptions, of their peers' attitudes and behaviors may be inaccurate reflections of actual levels of these constructs due to social information processing biases (e.g.,

Prinstein & Wang, 2005; Urberg, Shyu, & Liang, 1990). Indeed, adolescent girls with eating and appearance concerns are selectively attentive to shape- and weight-related information, such as comments from others, that confirms their negative self-perception (Cooper, 1997; Lee & Shafran, 2004). Further, girls reporting high levels of concern with their own bodies may incorrectly ascertain that close, similar others are also worried about their bodies, regardless of objective evidence (Stice & Whitenton, 2002). These perception biases may have actually provided a skewed report of actual levels of romantic partner influence, obscuring our understanding of whether longitudinal changes in attitudes and behaviors are due to romantic partner behaviors or to adolescents' biased perceptions of these behaviors. Indeed, at Time 1, perceptions of both teasing/criticism and pressure/encouragement were positively correlated with body dissatisfaction in girls, and perceptions of compliments were negatively associated with body dissatisfaction for boys. Future research should examine the role of emotional and cognitive factors—such as other indices of weight-related distress, self-esteem, and social information processing—in both adolescents' perceptions of romantic partner influence and in the relationship between perceptions and subsequent changes in weight-related attitudes and behaviors.

In addition to further investigating the source of potential perception biases in this domain, future research should measure the presence and magnitude of

discrepancies between perceived romantic partner influence and “actual”, or romantic partner-reported, influence. In their multi-informant study of interpersonal weight-related pressure, Shomaker and Furman (2009, 2010) found that adolescents’ perceptions were indeed different from those of their interpersonal partners (parents, friends, and romantic partners), but that both their own perceptions and their partners’ perceptions were independently meaningful in understanding changes in behaviors and attitudes over time. In future studies of various influence modes, the collection of influence data from both members of the romantic partnership will allow for a comparative analysis of the significance of each perspective – from the adolescent herself in addition to her identified romantic partner.

A significant strength of the current research is the investigation of between-person differences in influence effects as a function of romantic partner seriousness and length of relationship (romantic partner affiliation). Results indicated that within each gender, the characteristics of the romantic partner do significantly affect changes in behaviors and attitudes over time. However, although it was hypothesized that adolescents’ most serious romantic partners would be the most likely and most pertinent sources of influence on weight-related behaviors and attitudes, adolescents are simultaneously involved in a number of interpersonal relationships with the potential to effect attitudes and behaviors in synergistic, cumulative, or competing ways (e.g.,

Brechwald & Prinstein, 2011; Dunkley, Wertheim, & Paxton, 2001). Cross-sectional research in adolescent and young adult samples has demonstrated that pressures from father, mother, and friends to alter body shape or weight are mostly equivalent (e.g., Keery, van den Berg, & Thompson, 2004), while other research has found a differential impact of peers compared to parents and the media (Dunkley et al., 2001). Given that recent research comparing romantic partner pressure from a romantic partner, parents, and friends has suggested that influence from each interpersonal agent is significant (Shomaker & Furman, 2009, 2010), future work should examine differential influence effects from various types of romantic affiliates within each adolescent.

Another potential limitation of this study pertains to the six-month time interval chosen between the first and second data collections and the time interval for which adolescents were asked to report their most serious relationships at Time 1. The use of a prospective, longitudinal design is an important strength of this study, as a good deal of existing research on “peer influence” erroneously utilizes cross-sectional designs to examine causality, or transmission of attitudes and behaviors from peers to adolescents (Brechwald & Prinstein, 2011), and a six-month interval is usually adequate to detect changes in health-risk behaviors in studies of general peer influence or best friend influence. However, in the current study, the mean duration of relationships at Time 1 ranged from 36 weeks for a “talking” partner (deemed the least serious type of partner

by this sample) to 56 weeks for a boy/girlfriend (the most serious type of partnership), with notably large standard deviations within each romantic partner type. Of the 191 (89.3%) adolescents with a romantic partner at Time 1 who reported also having a romantic partner of any type at Time 2, approximately one third reported that their most serious romantic partner at Time 2 was not the same as the person they reported to be their most serious romantic partner at Time 1. Given that adolescents were asked to report their most serious partner within the six month period prior to data collection at Time 1, it is possible that Time 2 behaviors and attitudes were reported up to one year after involvement in their most serious romantic partnerships at Time 1. Although one of the only extant studies of romantic partner effects obtained significant influence effects across a one-year follow-up period (Shomaker & Furman, 2009, 2010), the wide variability in romantic partnership length and stability across this study suggests that influence effects may have been diluted by time. Alternatively, a break-up with a partner between each data collection point may have had an adverse impact on longitudinal associations between influence and behavior/attitudes. This is a difficult limitation to remedy, as dissolutions of any peer relationship, romantic or otherwise, are inevitable across time. Future research should attempt to match the timing of data collections to better coincide with actual relationship durations within the sample.

Although this study was designed to examine behaviors and attitudes considered theoretically and empirically more relevant for each gender, some recent research has suggested that muscularity may also be relevant for girls, and that boys may be increasingly focused on weight-loss behaviors (Gruber, 2007; McCabe, Ricciardelli, & Finemore, 2002; Olivardia, 2004). Although the significant gender differences in all outcome variables in this sample suggest that muscle-gaining behaviors and attitudes are more relevant for boys and weight-loss behaviors and attitudes more pertinent to girls, future research could use a similar theoretical approach to examine the role of each mode in a broader range of appearance-related constructs. Indeed, it may be that same-sex friends are more potent influence agents for gender-typical attitudes and behaviors (related to thinness for girls and muscularity for boys), and that the opposite-sex romantic relationship is a more fertile context for gender-atypical behaviors and attitudes. This research has been initiated elsewhere (see Shomaker & Furman, 2009, 2010), but needs to be extended in future studies.

Importantly, additional analyses conducted on this sample indicated opposite patterns of associations between body mass index (BMI percentile) and body dissatisfaction for African American and White girls. Because broad sociocultural norms tend to promote slenderness as the epitome of female beauty, theorists have proposed (e.g., Stice, 1994) and studies have found (e.g., McCabe & Ricciardelli, 2001) that higher

body weight in girls and young women is associated with higher levels of body dissatisfaction. However, other research has suggested that norms for female attractiveness vary by culture and ethnic identification. Specifically, empirical work has shown that the ideal female shape is larger within African American culture compared to White or European culture (Neumark-Sztainer et al., 2002), suggesting that girls and women of higher BMIs may not consistently endorse dissatisfaction with one's shape and weight. Indeed, a recent prospective study of risk factors for increases in body dissatisfaction indicated that African American boys and girls experienced smaller increases in body dissatisfaction over a five year period compared to adolescents of European American and mixed ethnic groups. In the current study, opposite associations between BMI percentile and body dissatisfaction for African American compared to White girls is generally consistent with this prior work, suggesting that African American girls may be protected from broad sociocultural promotion of thinness. This finding further suggests that ethnic identification may also impact weight-related influence effects within romantic partnerships. It is possible, for example, that African American girls may not perceive or be negatively affected by pressures to be thin from their romantic partners in the same way that White adolescent girls may be. A critical task of future research is to examine ethnicity—of both the target

adolescent and the romantic partner-- as a factor that may impact the intensity and direction of influence effects.

Further, although the relationship categories for this population were derived from conversations with participants themselves and therefore ecologically valid, the behavior and attitude constructs picked for this particular population may not have been ideal matches for the risky or unhealthy behaviors and attitudes present within these schools. As mentioned previously, the base rates of dieting, muscle-gaining behaviors, drive for thinness and drive for muscularity were relatively low. In adolescent community samples, low rates of appearance-related health risk behaviors are common (e.g., Rancourt & Prinstein, 2010). However, findings from this study strongly suggest that future research should investigate either a wider range of appearance-related behaviors, or the behaviors that have particular significance for the weight-related health of each population. This is especially important in light of the known psychosocial and health consequences of overweight and obesity in young people (Wang & Lobstein, 2006). It is possible that in this and other similar community samples, attention to food consumption and moderate engagement in exercise may be considered health-*promoting* behaviors, rather than health risk behaviors and attitudes. Additional examination of how these behaviors are fostered or attenuated via romantic

partnerships may ultimately reveal that these relationships are critically important for facilitating positive appearance-related outcomes.

4.2 Conclusions

The purpose of this study was to examine the role of adolescents' romantic partners in appearance-related health, with a focus on muscle-gaining behaviors and attitudes for boys, and weight-loss efforts among girls. In particular, this study aimed to examine conceptually distinct and theoretically-derived modes of influence as individual predictors of change in these constructs over the course of adolescents' 11th grade school year. Overall, findings from this study indicate that romantic partners are meaningful sources of influence across these modes, and that the level of affiliation of these partners—a function of the length of the relationship and the seriousness of the partner—may significantly alter the effect of these influence modes.

Given that this study is one of only a few that has investigated shape- and weight-related socialization via romantic partners, future studies of romantic partner influence should continue to examine these partnerships and relevant behaviors through a wide lens. Although a large body of literature has established that friends and peers significantly alter both self-perception and weight-related behaviors, many questions about romantic partner influence processes remain. Rigorous, prospective, and multi-

informant studies will enhance our understanding of both mechanisms and specific modes, and the appearance behaviors most amenable to change over time.

Appendix: Tables and Figures

Table 1: Demographic Information for Female and Male Participants

(Total N = 214)

	Female (n = 120)		Male (n = 94)	
	M (SD)	N (%) ^a	M (SD)	N (%) ^b
Age (years)				
Time 1	16.56 (0.40)	119 (99.2)	16.82 (0.49)	90 (95.7)
Time 2	17.00 (0.40)	119 (99.2)	17.09 (1.66)	90 (95.7)
Race				
White		64 (53.3)		48 (51.1)
African American		25 (20.8)		25 (26.6)
Hispanic or Latino		19 (15.8)		14 (14.9)
Other		12 (10.0)		7 (7.4)
BMI Percentile				
Time 1	63.95 (26.13)	105 (87.5)	61.47 (29.70)	85(90.4)
Time 2	64.24 (27.72)	110 (91.7)	61.43 (30.59)	84(89.4)

^a Percent of all female participants (N = 120)

^b Percent of all male participants (N = 94)

Table 2: Most Serious Romantic Partner Information for Female and Male Participants

	Female	Male	Total
	N (%)	N (%)	N (%)
Romantic Partner at Time 1^a	140 (56.5)	108 (43.5)	248 (81.8)
Type of Most Serious Romantic Partner at Time 1^b			
Boyfriend or girlfriend	92 (77.3)	73 (77.7)	165 (77.1)
Dating Partner	11 (9.2)	8 (8.5)	20 (9.3)
“Hanging out” Partner	14 (11.8)	11 (11.7)	25 (11.7)
“Talking to” Partner	2 (1.7)	2 (2.1)	4 (1.9)
Other Type of Partner	--	--	--
Length of Most Serious Romantic Relationship at Time 1 (Weeks)^b			
	M (SD)	M (SD)	M (SD)
Boyfriend or girlfriend	61.23 (54.32)	50.64 (68.83)	56.65 (61.03)
Dating Partner	53.00 (53.01)	50.43 (94.99)	51.80 (72.62)
“Hanging out” Partner	50.54 (69.33)	48.80 (41.73)	49.78 (57.75)
“Talking to” Partner	36.00 (22.63)	--- ^c	36.00 (22.63)

^a These data indicate the number (%) of participants from the larger longitudinal sample (N = 303) who reported a romantic partner in the 6 months prior to Time 1.

^b These data represent the participants who responded at Time 1 that they had a romantic partner within the past 6 months AND who were retained in the sample at Time 2. Total N of this sample = 214. This sample is used in all analyses in the current study.

^c Although 2 male participants reported that a “talking to” partner was their most serious at Time 1, neither participant provided information about the length of this relationship.

Table 3: Comparisons between Female and Male Participants: Influence Modes, Romantic Partner Affiliation, and Outcome Variables

	Female		Male		<i>t</i>
	N	M (SD)	N	M (SD)	
Influence Modes (T1)					
Teasing/criticism	117	1.07 (.26)	89	1.14 (.34)	1.82
Modeling	117	1.45 (.76)	89	1.44 (.70)	-.14
Compliments	117	2.81 (.84)	89	2.90 (1.11)	.64
Pressure ^a	117	1.09 (.28)	89	1.22 (.44)	2.85**
Appearance Conversations ^a	112	1.63 (.66)	82	1.65 (.70)	.22
Romantic Partner Affiliation (T1)^b	111	277.04 (263.73)	84	236.20 (328.04)	-.96
Behavioral/Attitudinal Outcomes (T2)					
Body Dissatisfaction	119	1.27 (1.33)	90	1.46 (1.28)	1.02
Dieting	119	1.96 (1.07)	90	1.45 (1.28)	-4.71**
Drive for Thinness ^c	120	2.63 (1.38)	90	1.70 (.69)	-5.86**
Muscle-gaining Behavior	117	1.41 (.68)	90	2.87 (1.57)	9.01**
Drive for Muscularity ^c	119	1.15 (1.28)	90	1.46 (1.01)	6.11**

** $p < .01$

^a Exploratory influence modes for both female and male participants. For girls, this mode represents pressure to be thin; for boys, this indicates pressure to be muscular.

^b Romantic partner affiliation = Length of relationship (weeks) X Type of relationship

^c Drive for Thinness was considered an exploratory outcome for female participants. Drive for Muscularity was considered an exploratory outcome for male participants.

Table 4: Pearson Correlations Among Influence Modes (Time 1), Romantic Partner (RP) Variables (Time 1), BMI Percentile (Time 1), and Behaviors/Attitudes (Time 2) for Female Participants

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Time 1														
1. Teasing/Criticism	-	-.01	.29**	.71**	.23*	-.03	-.04	.22**	.03	.07	-.02	.08	.06	.10
2. Compliments		--	.10	.07	.34**	.17	.14	.00	.07	.02	.02	.01	.03	.04
3. Modeling			--	.29**	.34**	.12	.07	.08	.13	.11	-.15	-.05	.10	.17
4. Pressure				--	.29**	.06	.03	.45**	.14*	.21**	.07	.28**	.20*	.29**
5. Appearance Conversations					--	.23*	.17	.13	.23*	.19*	-.09	.08	.15	.21*
6. RP Affiliation						--	.98**	-.07	.07	-.06	.01	.03	-.02	.01
7. RP Length of Relationship							--	-.06	.04	-.02	.08	-.03	-.02	-.10
8. BD								--	.53**	.63**	.20*	.70**	.39**	.58**
9. Dieting									--	.87**	.08	.39**	.81**	.80**
10. DT										--	.11	.46**	.73**	.81**
11. BMI %ile											--	.12	.07	.08
Time 2														
12. BD												--	.46**	.52**
13. Dieting													--	.84**
14. DT														--

*p<.05; **p < .01

Note. For all scales, higher scores are indicative of more extreme responding in the direction of the construct assessed.

RP Affiliation = Weighted romantic partner affiliation term (Length of relationship with romantic partner X Type of romantic partnership)

RP Length of Relationship = Length of relationship with romantic partner (in weeks)

BD = Body dissatisfaction

DT = Drive for thinness

Table 5: Pearson Correlations Among Influence Modes (Time 1), Romantic Partner (RP) Variables (Time 1), BMI Percentile (Time 1), and Behaviors/Attitudes (Time 2) for Male Participants

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Time 1														
1. Teasing/Criticism	--	-.01	.40**	.65**	.14	.14	.12	.06	.13	.15	.10	.10	.13	.08
2. Compliments		--	-.12	.20	.16	-.08	-.08	-.38**	.42**	.09	-.05	-.34**	.47**	.09
3. Modeling			--	.32**	.15	.17	.13	.21	-.22*	.20	.05	.21	-.16	.15
4. Pressure				--	.28*	.07	.06	.08	.22*	.22*	.19	.09	.25*	.22*
5. Appearance Conversations					--	.14	.13	.00	.32	.24	.22	.04	.30**	.21
6. RP Affiliation						--	.99**	-.04	.02	-.10	.13	-.02	.01	-.15
7. RP Length of Relationship							--	-.04	.01	-.13	.16	-.02	.01	-.15
8. BD								--	-.28**	.25*	.12	.64**	-.26*	.32**
9. Muscle-gain									--	.41**	-.11	-.27*	.68**	.16
10. DM										--	-.04	.15	.27*	.66**
11. BMI %ile											--	-.01	.06	.03
Time 2														
12. BD												--	-.32**	.36**
13. Muscle-gain													--	.13
14. DM														--

*p<.05; **p < .01

Note. For all scales, higher scores are indicative of more extreme responding in the direction of the construct assessed.

RP Affiliation = Weighted romantic partner affiliation term (Length of relationship with romantic partner X Type of romantic partnership)

RP Length of Relationship = Length of relationship with romantic partner (in weeks)

BD = Body dissatisfaction

Muscle-gain = Muscle-gaining behaviors

DM= Drive for muscularity

Table 6: Longitudinal Associations between Influence Modes and Romantic Partner Affiliation (Time 1) and Behaviors/Attitudes (Time 2) for Female Participants

	Time 2 Behavior/Attitude					
	Body Dissatisfaction		Dieting		Drive for Thinness	
	Standardized Coefficient	Unstandardized Coefficient (SE)	Standardized Coefficient	Unstandardized Coefficient (SE)	Standardized Coefficient	Unstandardized Coefficient (SE)
Time 1 Predictor						
Teasing/Criticism	-0.04	-0.23 (0.49)	-0.06	-0.23 (0.32)	-0.15*	-0.79 (0.39)*
Compliments	0.02	0.04 (0.11)	-0.04	-0.06 (0.07)	-0.02	-0.03 (0.08)
Modeling	-0.16*	-0.28 (0.11)*	-0.07	-0.10 (0.07)	0.08	0.14 (0.09)
Pressure	0.09	0.42 (0.51)	0.24**	0.93 (0.32)**	0.22**	1.09 (0.40)**
Appearance	--	--	-0.08	-0.13 (0.08)	--	--
Conversations						
RP Affiliation	0.04	0.02 (0.03)	-0.05	-0.02 (0.02)	-0.13*	-0.07 (0.03)*
Body Dissatisfaction	0.65**	0.68 (0.09)	-0.14*	-0.12 (0.06)*	0.07	0.08 (0.07)
Dieting	0.04	-0.12 (0.06)	0.88**	0.92 (0.06)**	0.48	0.63 (0.11)
Drive for Thinness	--	--	--	--	0.32**	0.31 (0.08)**
Time 1 Interaction Term						
RP Affiliation X Teasing/Criticism	0.19*	0.70 (0.31)*	--	--	-0.07	-0.26 (0.21)
RP Affiliation X Compliments	-0.03	-0.02 (0.05)	-0.03	-0.02 (0.03)	-0.07	-0.06 (0.04)
RP Affiliation X Modeling	0.04	0.03 (0.05)	0.09	0.05 (0.03)	0.05	0.04 (0.04)
RP Affiliation X Pressure	0.03	0.07 (0.18)	--	--	-0.07	-0.17 (0.12)
RP Affiliation X Appearance	0.13	0.11 (0.06)	0.10	0.07 (0.04)	0.04	0.04 (0.05)
RP Affiliation X Conversations						

*p<.05; **p < .01

RP Affiliation = Weighted romantic partner affiliation term (Length of relationship with romantic partner X Type of romantic partnership)

Missing values indicate that the coefficient was omitted from the final trimmed path analysis and thus not calculated.

Table 7: Longitudinal Associations between Influence Modes and Romantic Partner Affiliation (Time 1) and Behaviors/Attitudes (Time 2) for Male Participants

	Time 2 Behavior/Attitude					
	Body Dissatisfaction		Muscle-gaining Behaviors		Drive for Muscularity	
	Standardized Coefficient	Unstandardized Coefficient (SE)	Standardized Coefficient	Unstandardized Coefficient (SE)	Standardized Coefficient	Unstandardized Coefficient (SE)
Time 1 Predictor						
Teasing/Criticism	0.10	0.38 (0.47)	0.04	0.18 (0.54)	0.04	0.13 (.41)
Compliments	-0.08	-0.09 (0.12)	0.28**	0.38 (0.13)**	0.14	0.15 (0.10)
Modeling	-0.13	-0.23 (0.21)	-0.04	-0.09 (0.24)	-0.06	-0.11 (0.18)
Pressure	0.04	0.12 (0.34)	0.10	0.37 (0.40)	0.07	0.20 (0.30)
Appearance Conversations	0.15	0.28 (0.19)	--	--	0.11	0.20 (0.16)
RP Affiliation	0.08	0.03 (0.04)	0.04	0.02 (0.04)	--	--
Body Dissatisfaction	0.60**	0.75 (0.14)**	--	--	0.28	0.33 (0.11)**
Muscle-gaining Behaviors	-0.11	-0.10 (0.10)	0.53**	0.60 (0.11)**	-0.08	-0.07 (0.09)
Drive for Muscularity	0.03	0.03 (0.10)	0.03	0.03 (0.10)	0.58	0.54 (0.08)**
Time 1 Interaction Term						
RP Affiliation X Teasing/Criticism	-0.10	-0.13 (0.15)	-0.03	-0.05 (0.16)	-0.28**	-0.34 (0.13)**
RP Affiliation X Compliments	0.14	0.07 (0.06)	0.13	0.08 (0.06)	0.08	0.03 (0.05)
RP Affiliation X Modeling	0.12	0.06 (0.05)	-0.04	-0.03 (0.06)	-0.03	-0.01(0.04)
RP Affiliation X Pressure	-0.07	-0.07 (0.11)	-0.12	-0.14 (0.13)	0.09	0.08 (0.10)
RP Affiliation X Appearance Conversations	-0.19	0.07 (0.04)	0.08	0.04 (0.04)	-0.20*	-0.07 (0.03)*

*p<.05; **p < .01

RP Affiliation = Weighted romantic partner affiliation term (Length of relationship with romantic partner X Type of romantic partnership)

Missing values indicate that the coefficient was omitted from the final trimmed path analysis and thus not calculated.

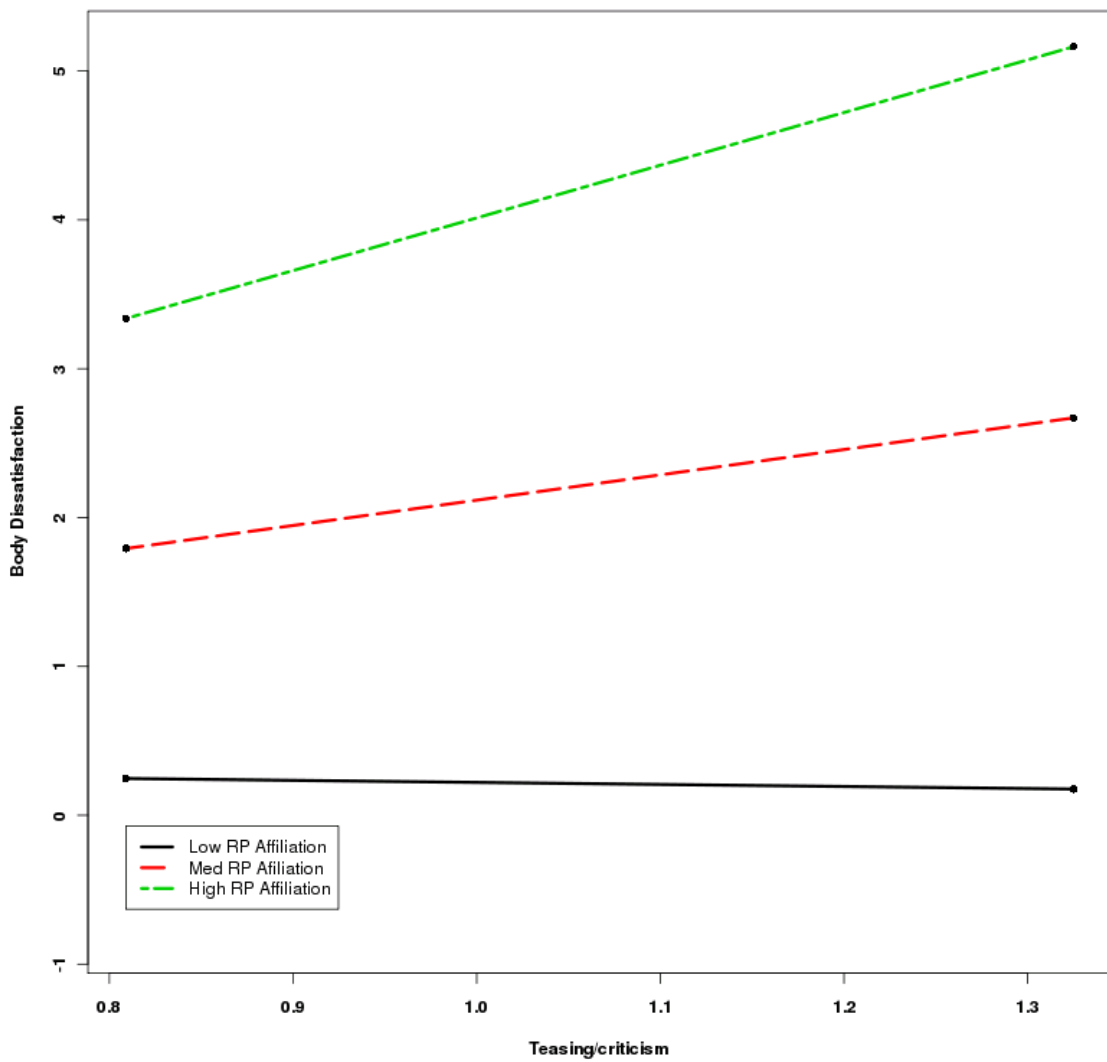


Figure 1: Moderation of Association between Teasing/Criticism and Body Dissatisfaction for Girls

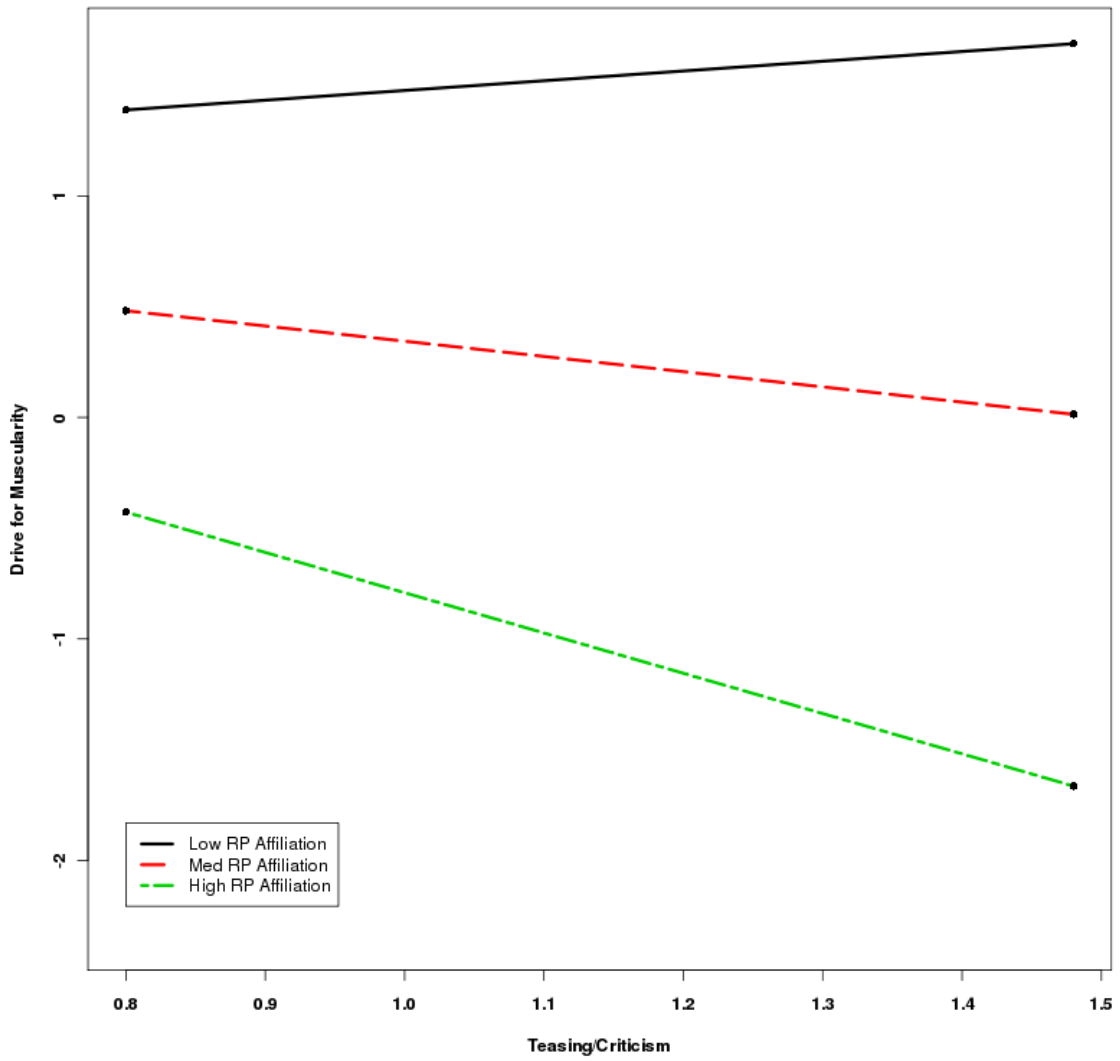


Figure 2: Moderation of Association between Teasing/Criticism and Drive for Muscularity for Boys

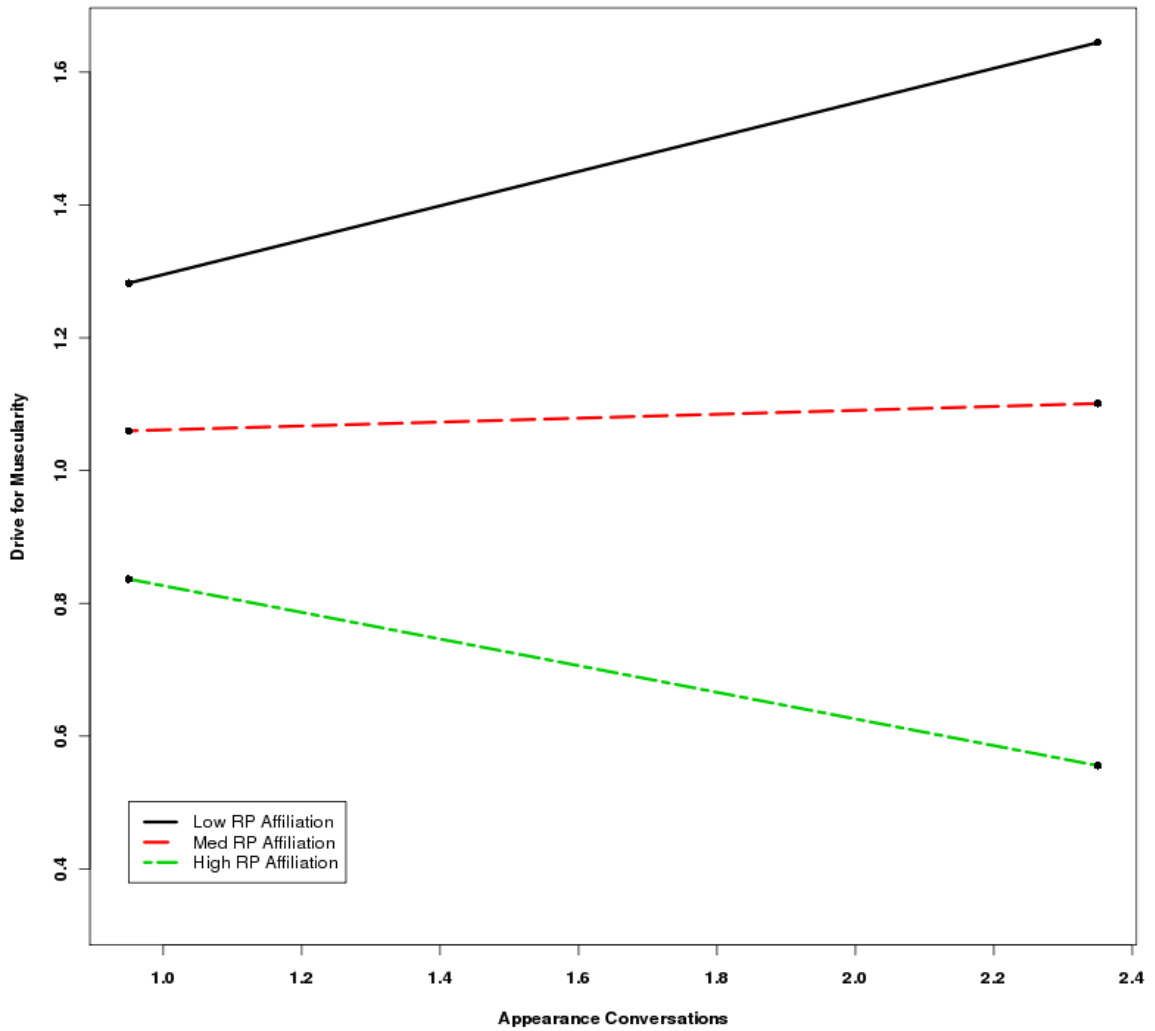


Figure 3: Moderation of Association between Appearance Conversations and Drive for Muscularity for Boys

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Biography

Whitney Brechwald Guerry was born in 1981 in Modesto, California. She received a Bachelor of Arts degree in Psychology and Anthropology from the University of California, Berkeley in 2004, completing an honors thesis in psychology under the mentorship of Stephen Hinshaw, Ph.D. Whitney took a position as a research assistant in the Department of Psychology at UC Berkeley soon after receiving her BA degree.

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