

TAKING THE GOOD WITH THE BAD: ADOLESCENT SIBLING
RELATIONSHIP PROCESSES AND THEIR ASSOCIATIONS WITH PERCEIVED
SIBLING SUPPORT, SELF-WORTH, AND BODY EVALUATIONS

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SUPPORT, SELF-WORTH, AND BODY EVALUATIONS

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ABSTRACT

The present studies examined the relationships between varying positive and negative sibling relationship behaviors and dyadic and individual adjustment. Study 1 investigated the association between sibling disclosures (regarding general, body-positive, and body-negative issues) with sibling support, self-worth, and body evaluations. Study 2 investigated the association between sibling psychological control with sibling support, self-worth, and body evaluations. Additionally, ordinal position, individual sex, and sibling sex composition were tested as moderators. Participants included 101 sibling dyads with at least one sibling in grades 10-12 with a closest in age sibling. Adolescents completed questionnaires and data were analyzed using Actor-Partner Interdependence Modeling (APIM; Kenny, Kashy, & Cook, 2006). Results showed that, in general, sibling disclosure was positive for the relationship (greater sibling support) and for the individual adjustment of female siblings but was associated with negative individual outcomes for male siblings. Additionally, psychological control revealed negative associations with sibling support. Also, individuals who psychologically controlled their siblings experienced some positive and negative individual outcomes. Moderation effects by ordinal position, individual sex, and sex composition were present, revealing

general trends for stronger relationships between the sibling behaviors and outcomes for later-born siblings and females.

CHAPTER 1

INTRODUCTION

Overview

The varying dyadic relationships that adolescents experience (e.g., parent-child, peer, and sibling) are unquestionably significant to those individuals' development (e.g., Smolak & Levine, 2001). Given this significance, some of these dyadic relationships (e.g., parent-child and peer relationships) have been investigated in great depth. For instance, it is often assumed that parents are considered the main influence for children early on in life whereas peers take over this role by adolescence (Cicirelli, 1995) and therefore, much research effort has been directed towards these dyadic relationships. Unfortunately, based on this premise, siblings have often been a forgotten relationship (Kramer & Bank, 2005); yet the sibling relationship provides its own unique contribution to adolescents' development (e.g., Brody, Kim, Murry, & Brown, 2003; Dunn, 2002) and therefore deserves special attention. Though some areas of sibling research have received a vast deal of attention, particularly in early childhood (e.g., sibling conflict and rivalry), many sibling behaviors have been minimized or ignored (Buhrmester & Furman, 1990; Dunn, 1993; 2002). As a result of the minimal coverage adolescent sibling relationships have received, many of the mechanisms through which siblings engage and influence one another are still unknown.

Part of the significance of studying the sibling relationship is its prevalence and lasting influence. The majority of individuals within the U.S. grow up with at least one other sibling (about 80%; Dunn, 2002). Though most sibling interactions decrease during adolescence, siblings still spend time together (Brody, 1996; Tucker, McHale, & Crouter, 2008) and influence each other. Furthermore, sibling relationships often begin before peer relationships and, many times, outlast parent-child relationships, typically making the sibling relationship the most sustainable relationship an individual will ever experience (Cicirelli, 1995; Dunn, 2002). The sibling relationship is also diverse, sometimes providing a training ground for conflictive, deviant, or otherwise negatively-associated behavior (e.g., Kramer & Bank, 2005; Slomkowski, Rende, Conger, Simons, & Conger, 2001), but can also be a source of positive influence (e.g., Gass, Jenkins, & Dunn, 2007; Tucker, McHale & Crouter, 2008; Tucker, Updegraff, McHale, & Crouter, 1999) from childhood to emerging adulthood (Shortt & Gottman, 1997). In sum, the sibling relationship provides dynamic experiences that influence individuals both positively and negatively throughout the lifetime (Pike, Kretschmer, & Dunn, 2009).

Sibling relationships during adolescence are particularly unique. Early in life, individuals' communication skills and emotional understanding are maturing (Dunn, 1996) and later in life siblings often separate for college or job transitions. The in-between period of adolescence provides a window into siblings' engagement into important potential processes that can influence the sibling relationship as well as influence some individual outcomes. Thus, this relationship, though forgotten in the vast majority of current research, is important to study because sibling relationships contribute significantly to adolescents' development. Furthermore, examining sibling relationships

is important because past sibling research has focused almost exclusively on sibling relationship quality (e.g., Buhrmester, 1992) while excluding the actual processes through which siblings engage and influence one another. In order to more fully understand how the sibling relationship influences one's development, it is important to also investigate different mechanisms by which the sibling relationship changes and is associated with adjustment.

Given the limitations, and in some instances the absence, of previous adolescent sibling research, the present studies extend our knowledge of sibling relationships by examining two important mechanisms for relational change and adjustment within the sibling relationship, self-disclosure and psychological control. These processes have been shown to have a significant impact on the well-being of other dyadic relationships (e.g., parent-child and peer) and on the internal adjustment of individuals (e.g., Barber, 2002; Radmacher & Azmitia, 2006). The aims of the following studies are to present relevant sibling literature that can inform our understanding of sibling self-disclosure and psychological control, and when necessary, to pull from other dyadic relationships literature (e.g., parent-child and peer) to fill in the gaps in this research. In addition, the present studies will explore some possible outcomes to these relational processes, both within the relationship (sibling support) and for each individual's adjustment (self-worth and body evaluations based on one's body worth/competence). Given the complexity of the sibling behaviors studied, the present work will be presented in two studies (although both studies utilized the same sample). The first study outlines the relationship between adolescent sibling self-disclosure, sibling support, self-worth, and body evaluations and Study 2 outlines the relationship between adolescent sibling psychological control,

sibling support, self-worth, and body evaluations. Both studies will also examine the moderating effects of sibling ordinal position, individual sex, and sex composition.

STUDY 1

Sibling Self-Disclosure

Self-disclosure, the reciprocal sharing of private and privileged information with another person, is most often viewed as a healthy relational process that encourages warmth and security within the relationship (Howe, Aquan-Assee, & Bukowski, 1995). Self-disclosure allows individuals to gain validation for their thoughts and feelings, express or withhold their identity (if they choose not to disclose certain aspects of the self), clarify their beliefs or values with others, release intense feelings, encourage intimacy with others (Derlega & Grzelak, 1979, as cited in Buhrmester & Prager, 1995), and gain advice from trusted others (McDonald & Westphal, 2003). Thus, one significant way that siblings might engage in adaptive processes that influence change in the relationship as well as adjustment outcomes, is through disclosure to one another, fostering an atmosphere of intimacy and support (Karos, Howe, & Aquan-Assee, 2007; Updegraff, McHale, & Crouter, 2002). Siblings often represent roles that form the basis of disclosure such as being sources of instruction, guidance, friendship, and mutual understanding. Furthermore, siblings report greater warmth when engaging in these behaviors (Karos, Howe, & Aquan-Assee, 2007). Siblings also possess a shared history, often sharing the same parents and developmental upbringing and therefore know many of the intimate details of each others' lives. For these reasons, the sibling dyad has the potential to foster an intricate connection, promoting self-disclosure (Howe, Aquan-Assee, & Bukowski, 1995). Despite our knowledge that siblings engage in facets that

promote, or form the basis of, disclosure, past research has been limited in explicitly exploring siblings' disclosure to one another.

Of the research that has investigated siblings' disclosure, the majority of this work has focused on the disclosures of siblings in childhood. By ages 3-4, siblings begin to express personal interests and more emotions with one another (Dunn, 1998). These sibling disclosures often start high in young childhood but decline throughout late childhood. Interestingly, despite the decline in disclosure, self-disclosures in late childhood tend to be more frequent with siblings than with parents, suggesting the importance of siblings as disclosure confidants. During late childhood/early adolescence, peer disclosures increase while sibling disclosures continue to decrease, although siblings still report supportiveness, companionship, and friendship with one another (important indicators of increased likelihood to disclose; Boer & Dunn, 1992; Buhrmester, 1992; Buhrmester & Prager, 1995).

Despite the decline of sibling disclosure during late childhood and adolescence, there are several reasons why adolescents may prefer to disclose within the sibling context as opposed to other dyadic contexts (i.e., parent-child or peer). As a result of parents' frequent interest in adolescents' health and safety, adolescents tend to disclose this information to parents more frequently than more personal information (Smetana, 2011). Adolescents often believe their activities or feelings are private and are not the concern of parents who may disagree with their behavior or thoughts. Furthermore, adolescents sometimes fear getting in trouble for breaking parents' rules, and thus prefer to hide or otherwise omit personal information from parents (Smetana, 2011). Given that siblings do not have the hierarchical status to punish one another as parents do for

children (unless they tattletale), siblings may feel they can safely express more personal issues to a trusted sibling without fearing repercussions (Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001).

Besides parent-child disclosures, friends are also another likely source of disclosure. During adolescence, friendship disclosures increase (Boer & Dunn, 1992). Though friends may be the optimal choice for disclosure in adolescence, I suggest that disclosure to siblings over friends has a few advantages. First, siblings would not have to fear dissolution of the relationship bond, whereas too much disclosure, or disclosure regarding particular issues, to a friend might end the friendship (perhaps because of jealousy or one friend maintaining too much control in the relationship). Second, depending on the issue of concern, siblings' long history with one another and family knowledge may make siblings more knowledgeable and effective disclosure partners compared to peers. Additionally, regardless of disclosures to parents and peers, sibling disclosure still remains moderately high throughout early adolescence (Buhrmester, 1992), suggesting that parents and peers are not adolescents' sole confidants. Succinctly, despite the importance of disclosures to parents and peers, siblings also appear to be a relevant and significant source of disclosure (even during adolescence) which is likely unique from any other dyadic structure.

Though it is clear that in addition to disclosing to parents and peers, individuals also disclose to their siblings (e.g., Howe et al., 2001), past research has been limited in its understanding of what sibling disclosure looks like. Past studies have focused on very broad and selective topics such as family, friendship, and academics (Howe, Aquan-Assee, Bukowski, Rinaldi, & Lehoux, 2000). These topics cover more general

information and do not wholly include issues like mature behaviors (e.g., drinking and sex), thoughts about oneself, and dating (issues that may be more relevant and interesting to adolescents). Moreover, previous sibling disclosure research has focused on the disclosure of thoughts and feelings (e.g., Howe et al., 1995) and has neglected the disclosure of the every-day activities that adolescents engage in including how they spend their time and how they behave around friends.

The current study seeks to extend our knowledge of young children's disclosures of feelings and thoughts to examine middle and late adolescent siblings' disclosures about their behaviors and activities outside of the family context (as well as their thoughts and feelings). Specifically, the present study seeks to examine topics that are particularly relevant to adolescent development. First, this study will examine siblings' general disclosure which includes previously studied thoughts and feelings (Howe et al., 1995), but also includes previously neglected disclosure topics such as siblings' daily activities and behaviors. Second, this study will also examine a topic that is particularly important during adolescence; body evaluations (both positive and negative), which have been seldom examined within the adolescent sibling context (e.g., Ata & Ludden, 2007). Past research underscores adolescents' preoccupation with body evaluations (both positive and negative; e.g., Phares, Steinberg, & Thompson, 2004), and adolescents' tendency to rate physical appearance as most closely associated with overall self-worth than other personal evaluations of the self (Harter, 1988). Family members are also often the initial resource for body image information, including information about dieting (Schur, Sanders, & Steiner, 2000; Thompson & Smolak, 2001), thus it is likely that discussions over body evaluations are present, at least to some degree, within the family context.

Indeed, siblings do report that among general topics of disclosure (e.g., media, school, friends, and family) they also disclose about eating and body-image issues (Tucker & Winzeler, 2007). Thus, the examination of general activities-related and body positive and body negative-related disclosures allows for a better understanding of many of the salient issues that adolescents may choose to disclose, topics which have been previously ignored in past research.

Given our limited understanding of adolescent sibling disclosure, the outcomes of such disclosure are unclear. Previous literature from parent-child and peer research frequently associates self-disclosure with beneficial outcomes. Greater self-disclosure is related to more intimacy (McNelles & Connolly, 1999) and emotional closeness (Radmacher & Azmitia, 2006) with peers whereas greater self-disclosure in parent-child relationships is related to parental trust and knowledge of adolescents' whereabouts and daily activities (Bumpus & Rodgers, 2009). Though we know that siblings are more likely to disclose to one another in a trusting relationship (Howe, et al., 2000), it is unclear what the outcomes of this disclosure are. The present study extends our understanding of sibling self-disclosure by more thoroughly investigating potential relational and individual outcomes to sibling disclosure. Sibling disclosure should be associated with the quality of the sibling relationship (siblings disclose more in positive, supportive relationships; Howe et al., 2000), but also to the individual adjustment of each sibling. Previous sibling disclosure literature has been limited in its understanding of individuals' adjustment. If siblings disclose in the context of a warm and supportive environment (e.g., Howe, et al., 2000), then this should also be associated with positive internal adjustment and not just benefit the sibling relationship. Thus, the current study

examines the relationship between self-disclosure and sibling support (a relationship outcome), self-worth, and body evaluations (individual outcomes).

A further purpose of the current study is to more thoroughly examine the moderating influences of sibling demographic variables (i.e., ordinal position, individual sex, and sibling sex composition) on the relationship between sibling disclosure and outcomes. What little research that has emerged from the sibling disclosure literature is the climate, or context, in which siblings are most likely to disclose to one another. In general, siblings are more likely to disclose to one another in the context of a warm and emotionally understanding relationship that they feel positively about (Howe, Aquan-Assee, Bukowski, Rinaldi, & Lehoux, 2000; Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001) and are less likely to disclose to siblings who are not supportive of them (Howe et al., 2001). When siblings do disclose to one another, siblings have a preference to disclose to earlier-born siblings over later-born siblings (Buhrmester, 1992), though this work has only examined young sibling pairs. As siblings move into adolescence, they may perceive that they can more mutually disclose information to one another due to the increase in sibling egalitarianism and not maintain a preference for disclosing to earlier-born siblings. Though I hypothesize that earlier-born adolescent siblings will disclose issues to later-born siblings, I suggest that later-born adolescent siblings will still maintain a stronger preference to disclose more frequently to earlier-born siblings than the reverse (Buhrmester, 1992), as younger adolescents (in terms of chronological age) as well as later-born siblings (in terms of ordinal position within the family) are generally more invested in the sibling relationship than older adolescents and earlier-born siblings (Buhrmester & Furman, 1990; McHale & Crouter, 1996).

Disclosure based on individual sex and sibling sex composition have also been examined. In late childhood, siblings are more likely to disclose to a female sibling and to a same-sex sibling (Howe, Aquan-Assee, & Bukowski, 1995) and report that female siblings, compared to males, provide the most emotionally supportive responses (Howe et al, 2001). Younger female siblings are also the least likely to disclose if they have an older brother (Buhrmester, 1992; Howe, Aquan-Assee, & Bukowski, 1995). Given this work, it is likely that the relationship between disclosure and outcomes will be strongest for females and sister-sister dyads compared to males and the other three sibling sex compositions. Based on these findings, it is expected that females and sister-sister dyads will report the most frequent disclosure compared to the other compositions, but differences among all sex compositions will be examined.

Although previous research begins to explain some structural factors in sibling disclosure, much of this work has been investigated from only one sibling's perspective—not utilizing the sibling dyad (e.g., Howe et al., 2000; Howe et al., 2001). To the extent that families promote disclosure (intimate discussions of feelings, wants, and abilities), the likelihood of siblings reciprocating discussions with one another increases (Howe, Aquan-Assee, & Bukowski, 1995), and therefore it is important to examine both siblings' engagement in disclosure. Hence, a principle contribution of the current paper is the use of Actor-Partner Interdependence Modeling (APIM; Kenny, Kashy, & Cook, 2006) that allows for the examination of the dynamic interplay between both siblings' ratings. Previous research on siblings has often focused on one perspective (e.g., Howe et al., 2000) or an average rating of siblings' reports (e.g., Richmond & Stocker, 2009). The current study contributes to a more accurate perception of the sibling

relationship by maintaining the independence of each person within the dyad. Thus, in the current study, APIM can clarify the association between an adolescent's own disclosure on that individual's own outcomes but also illuminate the adolescent's outcomes as a result of the sibling's disclosure. Furthermore, as a result of individuals' changes in disclosures over time (frequency and content; Smetana, 2011), it is important to investigate siblings beyond late childhood/early adolescence to understand how disclosures to siblings transform with age. Thus, the current study extends past research by evaluating self-disclosure throughout the adolescent period, lending a better developmental perspective to sibling disclosure and potential associated outcomes (e.g., sibling support, self-worth, and body evaluations).

Dyadic and individual outcomes to sibling disclosure.

Sibling support. Previous research reveals that siblings do disclose to one another about general and body-related issues (e.g., Howe et al., 2000; Howe et al., 2001; Tucker & Winzeler, 2007), but the research to date minimally explores how these disclosures are associated with the well-being of the sibling relationship. One important indicator of relationship well-being is the support that each individual perceives from the relationship. Individuals report that siblings provide them with support throughout adolescence and into emerging adulthood (Furman & Buhrmester, 1992), making sibling support a salient issue during this time period.

In general, both later- and earlier-born siblings provide support for one another, though later-born siblings more frequently look up to earlier-born siblings for support with a greater array of familial and nonfamilial issues (Tucker, McHale, & Crouter, 2001) and later-born siblings perceive greater amounts of support from earlier-born siblings

than vice versa (Branje, van Lieshout, van Aken, & Haselager, 2004). Additionally, same-sex and female siblings express the greatest amount of support and closeness in their relationships compared to mixed-sex and male siblings (Furman & Buhrmester, 1985; 1992; Tucker, Barber, & Eccles, 1996). Though there is some understanding of what ordinal position and sex differences most readily foster sibling support, previous research lacks an understanding of which relational processes encourage this support. The current study extends past research by investigating one potential avenue for greater support, sibling self-disclosure.

As a result of warmth, closeness, connectedness, competence, and positivity all being strongly associated with disclosure (e.g., Karos, Howe, & Aquan-Assee, 2007; Radmacher & Azmitia, 2006; Tucker & Winzeler, 2007), more frequent disclosure should also be associated with individuals feeling better about, and more secure in, their disclosing relationships. Indeed, facets of support are often constructed from connectedness and positivity (e.g., Furman & Buhrmester, 1985), and thus often form a foundation for support within a relationship. Furthermore, because self-disclosure in other dyadic contexts (e.g., parent-child and peer) is associated with intimacy (McNelles & Connolly, 1999), emotional closeness (Radmacher & Azmitia, 2006) and trust (Bumpus & Rodgers, 2009), it is presumed that other beneficial outcomes (i.e., support) will be present when siblings disclose to one another. Therefore, I propose that based on the frequency with which siblings engage in all content types of disclosure (general, body-positive, and body-negative), and based on the finding that siblings are more likely to disclose to one another in the context of a supportive relationship (Howe, Aquan-

Assee, Bukowski, Rinaldi, & Lehoux, 2000; Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001), that siblings should report more support when self-disclosures are greater.

Siblings do report increases in support when siblings provide one another with emotional support and advice about parents, social life, school work, and risky behavior (Tucker, McHale, & Crouter, 2001). Though these studies suggest that greater disclosures about general topics relate to positive outcomes (including greater sibling supportiveness), these topics do not clarify whether discussions of positive and negative body disclosure would be related to greater sibling support. Given that even in the presence of excessive disclosures of negatively-valenced issues linked to poor individual adjustment outcomes (Rose, 2002), those individuals in friendship dyads still appear to rate the quality of the relationship positively, it is possible that regardless of what siblings disclose about (general, body-positive, or even body-negative disclosures), all types of disclosure could still be related to greater relationship quality (i.e., sibling support). Thus, it is hypothesized that regardless of the nature of the disclosure (general, body-positive, or body-negative), siblings are expected to report more sibling support with more disclosure given the greater warmth and supportiveness that disclosure in general promotes (e.g., Howe et al., 2000).

The association between general, body-positive, and body-negative disclosure and support should be moderated by ordinal position, individual sex, and sibling sex composition. Specifically, there should be a stronger relationship between disclosure and support for later-born siblings given that later-borns are more invested in the sibling relationship than earlier-born siblings (Buhrmester & Furman, 1990; Tucker, Barber, & Eccles, 1996). Additionally, because females find intimacy to be particularly important

for high quality close relationships (Branje et al., 2004; Cole & Kerns, 2001), females engaged in sibling relationships with higher rates of disclosure should be more likely to report greater support from these relationships than brothers who engage in more disclosure (thus, it is possible that this relationship will be stronger for females than for males). Additionally, because females find intimacy to be so important in their relationships (Branje et al., 2004; Cole & Kerns, 2001), multiple females within the relationship (i.e., female-female sibling pairs) should desire the highest level of intimacy (i.e., the greatest amount of disclosure that should be associated with sibling support, that should then in turn, cause both females in the relationship to feel more intimate) and therefore female-female dyads should show the strongest association between disclosure and support compared to the other three sex compositions. As a result of examining both siblings within the dyad, the current study will be able to more accurately represent these ordinal position and sex differences from previous research.

Self-worth. Though sibling disclosure has been associated with intimacy and warmth (e.g. Howe et al., 2000), little beyond this is known about the outcomes of this relational process, particularly the adjustment outcomes of individuals. Self-worth is one particularly significant outcome that may be associated with the intimate dyadic experience of self-disclosing. The relevance and significance of self-worth being influenced within a dyadic context can be viewed from an attachment perspective (Bowlby, 1980; 1988). During infancy and childhood, as individuals interact with their primary caregiver they begin to form internal working models, or cognitive representations of themselves and others. With secure attachments, individuals begin to form positive internal working models. In other words, they begin to feel that others are

dependable and trustworthy. This allows individuals to also perceive themselves in a positive light; they feel worthy of love and value based on their solid relationship with significant others (Bowlby, 1980; 1988). Thus, in the context of a secure relationship, siblings can influence one another's perceptions of self-worth. In addition, since these working models are so closely linked to one's self-worth and one's ability to interpret the self and the surrounding environment positively, investigating self-worth as a construct significantly contributes to our understanding of how sibling processes contribute to the well-being of individuals.

In early childhood self-esteem begins high, but slowly declines throughout childhood and adolescence and does not appear to rise again until late adolescence and emerging adulthood. This could be due to a number of issues, including adolescents' more realistic representations of themselves, changes in their overall appearance and behavior due to puberty, or adolescents experiencing multiple stressors (e.g., beginning to date, experiencing more challenging academic work, and family stress; Gray-Little & Hafdahl, 2000; Marsh & Hau, 2003). Thus, self-esteem is a very relevant adjustment outcome for adolescents.

The importance of the association between self-worth (and other forms of adjustment) and disclosure has been examined in previous research. Within the parent-child literature, the more individuals disclose to their parents, the better their adjustment (fewer delinquent behaviors and depressive symptoms; Blocklin, Crouter, Updegraff, & McHale, 2011). Additionally, disclosures to peers have been associated with decreased depression and anxiety and increased self-esteem (Buhrmester, Furman, Wittenberg, & Reis, 1988). Given these associations between disclosure to parents and peers and

positive internal adjustment, the same positive outcomes may be true for siblings. Though these findings give support to the association between general disclosure and greater self-esteem, these studies do not clarify how specific discussions of body-related issues might relate to self-esteem. Past work has associated increased negative disclosures on one's body with lower self-worth and negative body perceptions (Ata & Ludden, 2007; Britton, Martz, Bazzini, Curtin, & LeaShomb, 2006; Nichter, 2000), but research has not examined the associations of self-esteem with positive-body disclosures or examined body-disclosures and self-worth in the context of the sibling relationship. It is possible that if negative reflection on one's body evaluations is associated with lower self-esteem, that reflecting positively on one's body might be associated with greater self-esteem.

As a result of self-disclosure being intimately linked to levels of trust and warmth (Howe et al., 2001), self-worth should be closely tied to the level of self-disclosure siblings perceive from their relationship. That is, the more trust and warmth siblings have (encouraged by intimate disclosure), the better individuals should feel about themselves within that context and thus report greater self-worth. Though these adjustment outcomes should be present when siblings generally disclose or disclose about positive aspects of their bodies, self-worth is expected to be lower when siblings engage solely in negative disclosures (particularly negative disclosures about their bodies) given the findings from past research (Ata & Ludden, 2007; Britton et al., 2006; Nichter, 2000).

In general, siblings have higher self-worth when there is validation, support, harmony, and an overall positive relationship (Dailey, 2009; Franco & Levitt, 1998; Yeh & Lemper, 2004) and thus both siblings in the dyad should experience greater self-worth

in the presence of a trusting disclosing relationship. Though, because later-born adolescents are more invested in the sibling relationship than earlier-born adolescents (Buhrmester & Furman, 1990) and because later-born siblings' attachment bond to their earlier-born siblings is stronger than the reverse (Bank, 1992), when siblings engage in more disclosure, it is likely that the association between sibling disclosure and self-worth will be stronger for later-born adolescent siblings than for earlier-born siblings.

In addition, female adolescents are more invested in social relationships (Cole & Kearns, 2001), and should therefore gain more personal growth (i.e., self-worth) from warm and intimate disclosures with siblings than males. Therefore, it is likely that the association between sibling disclosure and self-worth will be stronger for females than males. Additionally, multiple females within the relationship should gain the most personal growth from warm and intimate disclosure (considering that both females within the dyad are more heavily invested in increased intimacy compared to dyads with at least one male, of which disclosure would support), and therefore female-female dyads should also show the strongest relationship between disclosure and self-worth compared to the other three sex compositions.

Body evaluations. Body evaluations, whether positive or negative, are formed based on the perceptions one has of his/her physical appearance, values and attitudes towards his/her body, and one's image of oneself in relation to others (Haockenberry & Wilson, 2009). Body evaluations were defined in the present study as the degree of one's dependence on one's body evaluations to gain worth, esteem, and competence. As a result of body evaluations being closely linked to one's perceptions of worth, esteem, and competence (Harter, 1986) and self-worth based on one's body evaluations being a

domain-specific category under general self-worth (Crocker & Wolfe, 2001; Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995), the processes by which this worth is established should be similar to those of self-worth (the construct previously outlined). Thus, secure sibling relationships should help individuals establish/maintain positive internal working models (Bowlby, 1980; 1988) that, in turn, support the well-being and positive evaluations one has of one's self (including the evaluations one has of one's physical self; Crocker & Wolfe, 2001). Indeed, given that self-worth is constructed from a variety of domains, the more importance individuals place on their body evaluations (one domain of self-worth), the closer these evaluations should be tied to their overall perceptions of self-worth/value and competence (James, 1890, as cited in Crocker, Luhtanen, & Cooper, 2003). Additionally, given that physical attractiveness is the most strongly associated domain of self-worth to global self-worth for adolescents (Harter, 1988), body evaluations should be intimately linked to adolescents' perceptions of well-being and global self-worth through general disclosure and disclosure about domain specific topics.

As a result of disclosure influencing the self-worth and competence of individuals (Buhrmester, Furman, Wittenberg, & Reis, 1988), disclosure should be associated with all aspects of one's self-worth/competence including one's physical worth/competence. Additionally, it is important to evaluate some of the specific indicators of self-worth, namely body-worth/esteem in the context of disclosure. Though a majority of work has examined individual evaluations of one's body (e.g., Ogle & Damhorst, 2003), siblings' role in predicting one another's body evaluations has been vastly understudied. What little research there is on siblings' influence of each others' body perceptions suggests

that siblings may contribute significantly (i.e., greater sibling teasing about weight is related to lower body-esteem and problem eating; Ata & Ludden, 2007).

Adolescence is a unique time where evaluations of one's body are a particularly salient issue. For instance, during adolescence individuals often feel they are on display for an imaginary audience, where they believe others are making critical observations about their appearance and/or behavior (Elkind, 1967; 1981) and generally show a preoccupation with their own body evaluations (Field, Camargo, Taylor, Berkey, Frazier, Gillman, & Colditz, 1999; Gardner, Sorter, & Friedman, 1997; Phares, Steinberg, & Thompson, 2004; Tiggemann & Wilson-Barrett, 1998). As a result of these preoccupations, adolescents are particularly sensitive to others' and their own perceptions of their physical appearance. In addition, the transition of puberty makes adolescents particularly sensitive to their changing bodies (Wichstrom, 1999). Given the importance individuals place on their physical appearance during adolescence, this may be a particularly salient domain that shapes adolescents' self-worth and competence. Despite these important developmental transitions, little research has examined siblings' influence of body evaluations during this critical time. The current study corrects for these limitations by investigating a variety of body evaluations based on one's value and competence in one's body perceptions. Additionally, body image research has been almost exclusively conducted with individuals or between mothers and daughters (e.g., Ogle & Damhorst, 2003), and therefore the present study extends this knowledge by including both siblings' influence on their own and one another's body evaluations.

Past research has shown that siblings do communicate about their bodies. Among other topics such as extracurricular activities, media, and academics, siblings also report

that they communicate about eating and body image with one another (Tucker & Winzeler, 2007). Past research on sibling disclosure has focused exclusively on disclosure of negative body evaluations including weight loss (Vincent & McCabe, 2000) and changing one's physical appearance (Lee, Damhorst, & Ogle, 2009) or has emphasized siblings' engagement in negative behaviors (e.g., teasing) as associated with negative body perceptions (Ata & Ludden, 2007). Thus, there has been some evidence to suggest that siblings who disclose negatively about their bodies also have negative evaluations of their bodies (Clarke, Murnen, & Smolak, 2010; Gapinski, Brownell, & LaFrance, 2003; Stice, Maxfield, & Wells, 2002), but no research to date has evaluated siblings' discussions of positive body evaluations.

When siblings disclose about their varying body evaluations (both positive and negative) or disclose about general information, this should be associated with the value, worth, and competence that individuals have in their appearance, given that varying types of disclosure are associated with self-worth and competence (Buhrmester, Furman, Wittenberg, & Reis, 1988). As a result of past research associating negative body talk with negative body perceptions (e.g., Craig, Martz, & Bazinni, 2007; Nichter, 2000; Stice & Bearman, 2001; Yuan, 2010), the reverse should also be true that positive body talk should be associated with greater body worth and physical competence. Additionally, disclosure of general issues should also be associated with greater body worth and physical competence due to general disclosure's link with other positive outcomes (Buhrmester et al., 1988). Therefore, the present study will extend previous research by investigating both positive and negative body disclosure, along with general disclosures,

to more accurately represent the range of discussions adolescents might have about their appearance/body and general day-to-day topics.

These dynamics should also be influenced by particular structural features (i.e., ordinal position, individual sex, and sex composition). Although all siblings (regardless of ordinal position) should make evaluations on their bodies based on the importance of this domain during adolescence (e.g., Field et al., 1999), given later-born siblings' greater investment in the sibling relationship (Buhrmester & Furman, 1990), the importance of this relationship may make the association between disclosure and body evaluations stronger for later-born siblings than earlier-born siblings.

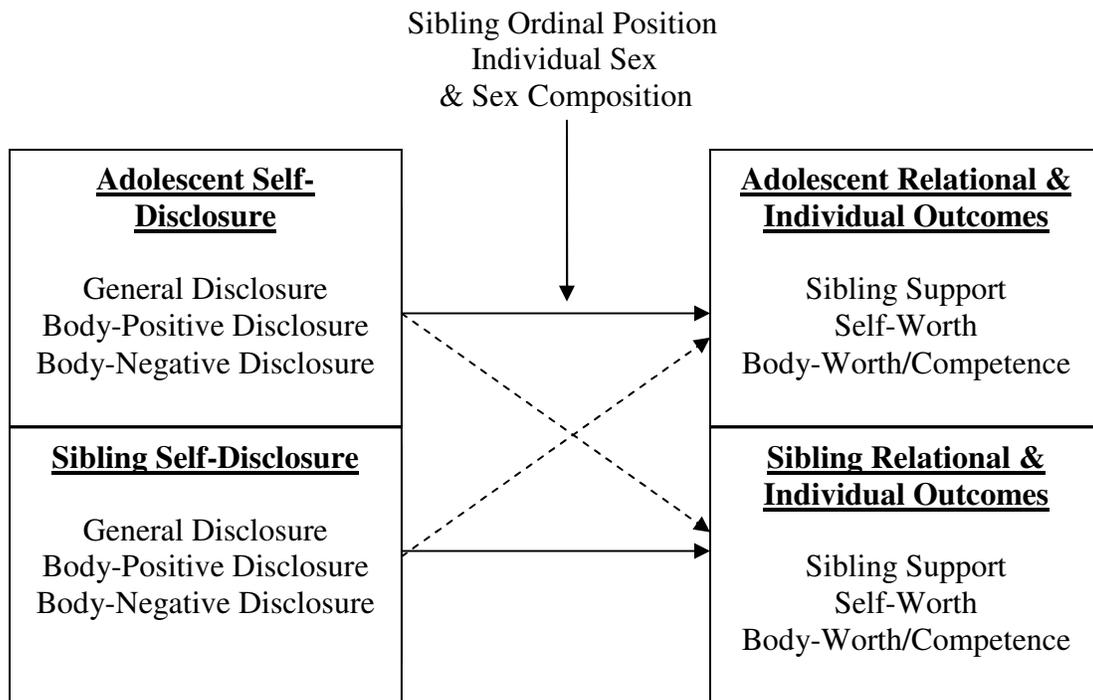
In terms of individual sex, because males and females experience different pressures to engage in body-related disclosures (females are particularly focused on negative body perceptions and disclosures; Britton, Martz, Bazzini, Curtin, & LeaShomb, 2006) and because males and females experience different pressures and desires related to physical appearance (females desire to be thinner than males do; Bearman et al., 2006; Gardner, Friedman, & Jackson, 1999; O'Dea & Yager, 2005), males and females should both show associations between disclosure and adjustment, though these associations should differ by sex. Given females' greater reliance on intimacy and relationship quality (Cole & Kearns, 2001), females should show a stronger relationship between disclosure and the outcomes compared to males. Additionally, multiple females within the dyad should also show a stronger relationship between disclosure and the outcomes given that both females should be more highly invested in the sibling relationship than any other dyadic composition.

Present Study and Hypotheses

Previous research underscores the importance of self-disclosure and the association these processes have with relational well-being and individual adjustment (e.g., Mayseless & Scharf, 2009; Radmacher & Azmitia, 2006). This research has mainly focused on parent-child and peer dyads to the near exclusion of sibling dyads. Thus, the current study will correct these limitations by exploring the relationships between these processes and their associations with sibling support and individual adjustment (self-worth and body evaluations). Additionally, because the majority of past sibling research on disclosure has been limited in its investigation of sibling structural factors (Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001), the current study will extend our understanding of sibling self-disclosure by examining the moderating influences of ordinal position, individual sex, and sex composition. Furthermore, the majority of sibling research to date has focused on childhood sibling relationships and individualistic reports (e.g., Howe et al., 2000); therefore, the current research will expand our understanding by focusing on a broader and older range of siblings throughout adolescence together with the perspective of both siblings. Given our very narrow understanding of how siblings engage in self-disclosure, the present hypotheses initiate a foundation for clarifying the association between disclosure and potential sibling outcomes. Therefore, three hypotheses were put forth for siblings' engagement in general, body-positive, and body-negative disclosure.

As a result of the use of Actor-Partner Interdependence Modeling, both actor (adolescent) and partner (sibling) effects should be present (see the figure below). That is, individuals should be reporting on both their own disclosure and the relationship this disclosure has to their adjustment/outcomes (actor effect) and the association of

disclosure from the sibling to the individual's adjustment/outcomes (partner effect). Though past research has only examined one perspective within sibling disclosure (e.g., Howe et al., 2000), the present study hypothesizes that the actor and partner effects for disclosure will be similar. Therefore, given that it is likely important to be both the one who discloses and the one who receives sibling disclosure, and that disclosure promotes positivity and warmth (Howe et al., 2001), the actor and partner outcomes should be similarly important for the outcomes because disclosure should, in most instances, be positive for both members of the dyad.



Note. Solid horizontal lines indicate actor effects. Dash diagonal lines indicate partner effects.

(1) Siblings' use and reception of general disclosure will be related to greater sibling support, self-worth, and body-worth/competence. This relationship should

be moderated by siblings' position in the family, individual sex, and sex composition.

(1.A) *Sibling support.* As a result of sibling disclosure being associated with relational warmth and support (Howe, Aquan-Assee, Bukowski, Rinaldi, & Lehoux, 2000; Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001), when siblings do disclose to one another, it should foster a feeling of sibling supportiveness, regardless of the content of the disclosure.

(1.B) *Self-worth and body evaluations.* Siblings who disclose to one another should have better adjustment (greater self-worth) based on previous parent-child and peer disclosure associations with self-worth (Blocklin, Crouter, Updegraff, & McHale, 2011; Buhrmester, Furman, Wittenberg, & Reis, 1988). Additionally, given that physical appearance is an important indicator of global self-worth for adolescents (Harter, 1988), the more siblings generally disclose, the better their domain-specific self-worth (i.e., worth and competence in physical appearance) should be.

(1.C) *Moderating role of position.* Due to later-born siblings' greater level of investment in the sibling relationship (Buhrmester & Furman, 1990), it is hypothesized that later-born siblings will gain more positive outcomes (sibling support, self-worth, and body-worth) from greater disclosure than earlier-born siblings.

(1.D) *Moderating role of sex.* Because females find intimacy to be particularly important for high quality close relationships (Branje et al., 2004; Cole & Kerns, 2001), females engaged in sibling relationships with higher rates of disclosure should be more likely to report greater support, self-worth, and body-worth/competence from these relationships than brothers who engage in more disclosure. Additionally, multiple

females within the relationship (i.e., female-female sibling pairs) should be interested in the highest level of intimacy compared to brother-brother or mixed sex dyads and therefore sister-sister dyads should show the strongest association between disclosure and the outcomes compared to the other three sex compositions.

(2) Siblings use and reception of positive body-related disclosure will be related to greater sibling support, self-worth and body-worth/competence. This relationship should be moderated by siblings' position in the family, individual sex, and sex composition.

(2.A) *Sibling support.* Similar to hypothesis 1, siblings should report greater support when they engage in more disclosure with one another, regardless of the content.

(2.B) *Self-worth and body evaluations.* Considering that greater negative disclosures on one's body are associated with lower self-worth and negative body perceptions (Ata & Ludden, 2007; Britton et al., 2006; Nichter, 2000), it was assumed that the reverse would be true. Thus, when siblings engage in positively-focused disclosures about their bodies, individuals should feel better about themselves in general (higher self-worth) and about their bodies in particular (greater body-worth/competence).

(2.C) *Moderating role of position.* Similar to hypothesis 1, the association between disclosure, sibling support, self-worth, and body-worth should be stronger for later-born siblings than for earlier-borns.

(2.D) *Moderating role of sex.* Similar to hypothesis 1, the association between disclosure, sibling support, self-worth, and body-worth should be stronger for both females and sister-sister dyads compared to males and the other three sex compositions (brother-brother, sister-brother, and brother-sister).

(3) Siblings use and reception of negative body-related disclosure will be related to greater sibling support, less self-worth and less body-worth/competence. This relationship should be moderated by siblings' position in the family, individual sex, and sex composition.

(3.A) Sibling support. Similar to hypotheses 1 and 2, siblings should report greater support when they engage in more disclosure with one another, regardless of the content, given that past research shows that even excessive disclosure of negatively associated events are linked to positive perceptions of the relationship within friendship dyads (Rose, 2002).

(3.B) Self-worth and body evaluations. In general, when an individual focuses on the negative aspects of one's body, this is associated with lower self-worth and negative body perceptions (e.g., Ata & Ludden, 2007; Lee, Damhorst, & Ogle, 2009), thus it was expected that the more frequently siblings disclose about the negative aspects of their bodies, the less general self-worth and body-worth/competence individuals should report.

(3.C) Moderating role of position. Similar to hypotheses 1 and 2, the association between disclosure, sibling support, self-worth, and body-worth should be stronger for later-born siblings than for earlier-born siblings.

(3.D) Moderating role of sex. Similar to hypotheses 1 and 2, it was assumed that females and sister-sister dyads would have the strongest association between disclosure and outcomes compared to males and all other sibling sex compositions (Cole & Kerns, 2001; Dunn, Slomkowski, & Beardsall, 1994).

CHAPTER 2

METHOD

Participants/Sample

Participants included 101 sibling dyads with at least one sibling in grades 10-12 with a closest in age sibling, less than five years apart and both living within the same home. Power Analyses for Hierarchical Linear Modeling (Raudenbush, 1997; Raudenbush & Liu, 2000; Raudenbush & Liu, 2001) suggested 99 clusters (one sibling dyad = one cluster) in order to reach .8 power and an alpha level of .05. Additionally, APIM sample size, for the purpose of power estimates, is projected to be somewhere between the number of individuals (202 in the present study) and the number of dyads (101 in the present study; Kenny et al., 2006). Given that APIM has been successfully performed on samples as few as 45 (personal communication, David Kenny, June 27, 2011), it was presumed that recruiting approximately 100 dyads would provide sufficient power to detect differences.

Participants' ages ranged from 11 to 21 years of age (later-born sibling age range = 11-17, *Mean* = 13.67, *SD* = 1.56; earlier-born sibling age range = 14-21, *Mean* = 16.46, *SD* = 1.35). The mean age difference between siblings was 2.79 years. Male participants made up 45.6% of the participants with a relatively equal distribution of sibling sex composition (male-male: 26; female-female: 33; male-female: 20; female-male: 22). The

birth order of siblings varied with 38% of the sample consisting of first- and second-born siblings, 45% of second- and third-born siblings, 13% of third- and fourth-born siblings, and 4% of individuals reporting later than third-born status in the family. As a result of all of our participants being closest-in-age siblings, siblings from this point forward will be referred to as either later-born or earlier-born siblings within the dyad (as opposed to referring to their specific birth order within the larger family context). Participants ranged in grade from sixth grade to post high school (or college; 5.4%), with the modal response being tenth grade. All siblings were residing in the same home, regardless of college status.

According to parent reports, participants came from a relatively homogeneous and affluent population. Of those participants that provided their ethnicity, the majority of the sample consisted of European Americans (85%) with the rest of the sample reporting African American (5%), Asian (2%), or other ethnicities (4%; the additional 4% of the sample did not report on ethnicity). Most families were intact (72.3%) with 12.9% of parents married in a blended family, 10.9% of parents divorced, and 3.9% of the parents reporting being single (either never married or widowed). Over 80% of the parents of participants had obtained a college or graduate degree (81.2%). The median annual income was over \$100,000 (30.7%). Associations and differences between the study variables and ethnicity (tested as white and non-white), marital status (tested as intact and not intact), family income, and parental education were tested. There were no significant differences between ethnicity and marital status on the study variables and only one significant difference was found between family income (participants that had a higher household income were more likely to report higher self-worth; $r = .18, p < .05$) and

parental education (individuals with parents that had more educational background tended to disclose more general information to their siblings; $r = .20, p < .01$) and the study variables.

Due to the overwhelming lack of associations between the demographic variables and the study variables, the demographic variables were extracted from the analyses in order to preserve degrees of freedom. With all remaining data it was assumed that any missing data were missing at random (MAR), and therefore the Expectation Maximization procedure (EM; Schaffer, 1997) in SPSS was utilized in order to retain all of the data.

Measures

Parent and adolescent demographic questionnaire. One parent (93% were mothers) within the home reported on each participating child's sex, age, birth date, ethnicity, and school grades along with family income, parental education, and marital status at the time the parent provided permission for his/her children to participate. Additionally, adolescents provided/confirmed their own sex, age, birth date, ordinal status, height, and weight (see Appendices A and B). Body Mass Index (BMI; Centers for Disease Control and Prevention, 2009) was calculated from self-reported height and weight measurements. This widely-used index classifies a person as underweight (<18.5), normal weight (18.5–24.99), overweight (25–29.99), or obese (>30). BMI was used in this study as a descriptor of the sample and also provided information on the general health of the adolescents. Of those participants that provided height and weight information (87% of participants provided this information), 16.3% were underweight, 62.9% were average, 10.9% were overweight, and 1.6% were obese. Thus, the majority

of participants were in a healthy weight range. BMI was also used as a control for the body-related variables because past research has shown an association between BMI and women's perceptions of their own physical attractiveness (Dijkstra & Barelds, 2011).

General and body-related self-disclosure. A measure revised from previous work (Smetana, Metzger, Gettman, & Campione-Barr, 2006; Smetana, Villalobos, Tasopoulos-Chan, Gettman, & Campione-Barr, 2009; Yau, Tasopoulos-Chan, & Smetana, 2009) assessed sibling's frequency of self-disclosure to sibling and mother (used as a control) on topics related to school, dating, risky behavior, and friends. This measure was originally designed to assess disclosure by domains based on social domain theory (prudential, personal, conventional, and multi-faceted issues; Smetana, 2006; Turiel, 2002) but was used in the present study as a global assessment of disclosure. Three of the original items were removed from the general disclosure measure ("whether I drink wine or beer," "whether I use marijuana or other illegal drugs," and "if I hurt someone [hit, shove, kick]") because the Institutional Review Board indicated these items posed greater than minimal risk to participants. The resulting general disclosure measure included 28 items. An additional 15 items were created for the purposes of this study to capture adolescents' positive (7 items) and negative (8 items) disclosures about body-related issues such as dieting, exercising, and body image (see Appendix C for complete measure). Cronbach Alphas for the current measure for general disclosure were .91 (maternal) and .92 (sibling) for later-born siblings and .91 (maternal) and .90 (sibling) for earlier-born siblings. Reports of positive body-related disclosure were .82 (maternal) and .82 (sibling) for later-born siblings and .84 (maternal) and .84 (sibling) for earlier-born siblings. Finally, reports of negative body-related disclosure were .80 (maternal) and .82

(sibling) for later-born siblings and .88 (maternal) and .86 (sibling) for earlier-born siblings. All items were assessed on a 5-point scale (1 = never tell to 5 = always tell) with an additional option for “I never do/feel this way.” Separate mean scores for general disclosure, positive body-related disclosure, and negative body-related disclosure for each relationship (maternal and sibling) for later-born and earlier-born siblings were used in the final analyses. Higher scores equal greater frequency of disclosure.

Sibling support. The Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985) includes 11 relationship quality sub-scales originally assessed for children’s/adolescents’ relationships with parents, grandparents, siblings, best friends, and teachers. As shown in previous research (Adams & Laursen, 2007; Furman, 1996), the items of the 11 subscales load on three distinct factors: support, negativity, and relative power. This study examined the support (positivity) factor (21 items) which includes: reassurance of worth, affection, companionship, instrumental aid, intimate disclosure, nurturance, and reliable alliance. Cronbach Alphas for the present study were .94 for later-born and earlier-born siblings. All items were assessed on a 5-point scale (1 = little or none to 5 = the most) and measured individuals’ overall reports of their siblings’ supportiveness in the relationship (see Appendix D for complete measure). Separate mean scores for later-born and earlier-born siblings’ combined support/positivity factor were used in final analyses. A higher score equals greater sibling support.

Self-worth. The Self Perception Profile for Adolescents (SPPA; Harter, 1988) consists of five separate subscales (a total of 45 items) tapping different domains of self-reported children’s and adolescents’ competency (academic, social, behavioral conduct,

athleticism, and physical appearance). Each of these domains was added for a global measure of self-worth (see Appendix E for complete measure). The physical appearance domain of self-worth was also used in this study for a measure of body evaluation (see below for further description). Cronbach Alphas for the current study were .90 for later-born siblings and .87 for earlier-born siblings. For each item, participants were given two statements and asked to choose the statement most like them and then indicate whether the statement was “really true of me” or “sort of true of me.” Separate mean scores for later-born and earlier-born siblings’ global self-worth were used in the final analyses. A higher score equals greater self-worth.

Body/appearance evaluations. Three self-report measures were used to examine the value or competence a person places on her body/appearance. The first measure, The Body Esteem Scale (from henceforth referred to as body-esteem; Mendelson & White, 1982), was designed to capture how a person values his appearance and body. This 24-item scale was designed to assess how children and adolescents value their own bodies and how they are evaluated by others. The measure was originally assessed using a “yes/no” response but was revised to a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree) in order to give adolescents more variability in their answers. Cronbach Alphas for the current study were .87 for later-born siblings and .88 for earlier-born siblings. Separate mean scores for earlier-born and later-born siblings’ body-esteem were used in the final analyses. A higher score equals greater body-esteem.

The second measure, Contingencies of Self-Worth (from henceforth referred to as appearance-related self-worth; Crocker, Luhtanen, Cooper, & Bouvrette, 2003), is a 35-item measure and was originally designed to assess seven sources of self-esteem in

college students (i.e., others' approval, appearance, competition, academic competence, family support, virtue, and God's love). For the present study, the extent to which adolescents' sense of self-worth is based off of their appearance was utilized (5 items). Reliability for the current study was good (.80 for later-born siblings and .75 for earlier-born siblings). Items were assessed on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree). Separate mean scores for later-born and earlier-born siblings' self-worth based on appearance were used in the final analyses. A higher score equals a greater reliance on one's appearance for gaining self-worth.

The third measure of body-worth was one of the subscales from the Self Perception Profile for Adolescents (SPPA; from henceforth referred to as competence in physical appearance; Harter, 1988); physical appearance. This measure contains five items assessing the extent to which children and adolescents feel competent in their physical appearance. The structure of this measure was the same for the overall measure of self-worth. Cronbach Alphas for later-born siblings was .85 and for earlier-born siblings was .86. Separate mean scores for later-born and earlier-born siblings' competence in physical appearance were used in the final analyses. A higher score equals greater competence in the realm of physical appearance.

Given that the age range of siblings varied so widely from pre-adolescents (starting at 11 years-of-age) to emerging adults (ending at 21 years-of-age), multiple measures for evaluating one's body were assessed separately in order to best capture the associations between self-worth/competence and appearance. The Body Esteem Scale and Harter's physical appearance subscale have been used with younger populations with good reliability (e.g., Duncan, Al-Nakeeb, & Nevill, 2009; Harter, 1988; Sands &

Wardle, 2002), whereas The Contingencies of Self-Worth scale has been reliably utilized with emerging adult populations (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). Additionally, The Body Esteem Scale is a more global report of body-esteem (i.e., how one generally feels about her appearance) whereas The Contingencies of Self-Worth scale rates one's self-worth specifically on one's appearance (i.e., the extent to which one's self-worth is based solely on physical appearance) and Harter's physical appearance subscale reports one's competence in his physical appearance. Additionally, although these measures tap similar concepts relating to the worth or value one places on his appearance, because these measures are only moderately positively correlated in some instances (body-esteem and competence in physical appearance; $r(200) = .40, p < .05$, earlier-born reports, $r(200) = .58, p < .01$, later-born reports) and in other instances, moderately negatively correlated (appearance-related self-worth and body-esteem; $r(200) = -.45, p < .01$, earlier-born reports; $r(200) = -.36, p < .01$, later-born reports; appearance-related self-worth and competence in physical appearance; $r(200) = -.34, p < .01$, earlier-born reports, $r(200) = -.32, p < .01$, later-born reports, see Table 1), it was presumed that these measures were tapping different areas of body-worth/body-competence and thus, all three measures were retained and tested separately (see Appendix F for complete measures).

Procedures

Participants were recruited from three local high schools within a suburban district. Letters describing the nature of the study were sent to families with adolescents in 10th – 12th grades (3,332 families total). All interested families contacted the investigators if they were interested in participating. Inclusion were that at least one

sibling had to be in 10th – 12th grade, with a sibling (closest in age) less than five years apart with both siblings living in the same home. Of the total families contacted, 3% of the sample that was approached and met eligibility criteria agreed to participate. Honorarium included \$5 for every participant who returned his/her questionnaire. To encourage the timely return of questionnaires, the investigators conducted a raffle for four \$100 gift certificates to participating dyads (\$50/sibling) for all sibling dyads that returned their questionnaires within three weeks of receiving them. Once families agreed to participate, they were sent individual emails with links to an online survey (or mailed paper questionnaires if requested) to complete at home. Adolescents provided assent/consent and reported on their own attitudes and behaviors as well as perceptions of their mother's (used as a control) and sibling's behaviors. Parents also completed a brief questionnaire for the purposes of obtaining consent and providing family demographic information (e.g., family income, parental education). Parental consent and participant assent/consent were obtained at the beginning of the questionnaire. After two weeks of receiving the questionnaire, participants who had not returned their questionnaire received a follow-up phone reminder to complete the study by the three-week deadline. Once all participants had returned their questionnaires, participants were informed of the results of the raffle through phone and email.

CHAPTER 3

RESULTS

Descriptive Statistics

Correlational analyses were run to compare the study demographic variables, general and body-related disclosure, and the outcome variables separately for later-born and earlier-born siblings (with the addition of variable means and standard deviations; see Table 1). In general, according to sibling reports, females and the eldest later-born siblings were more likely to base their self-worth on appearance whereas earlier-borns and males reported greater general body-esteem than females. Body mass index had a small negative association with body-esteem such that the greater one's body mass (being overweight or obese), the less body-esteem he had. Also, earlier-born siblings were less likely to disclose positive body-related information to mothers the heavier they were.

In terms of disclosure, the younger later-born siblings were, the more likely they were to disclose general information to mothers. Later- and earlier-born siblings' disclosure of general information was moderately and positively associated with disclosure of positive and negative body-related disclosure such that the more siblings disclosed in one area, the more likely they were to disclose about other areas. Also, disclosure to mother and sibling were highly positively correlated such that, the more an

individual disclosed to one family member (mother or sibling), the more likely she was to disclose to the other member.

In reference to the outcome variables, the more later- and earlier-born siblings disclosed about general information to mothers and siblings, the greater their self-worth and sibling support (there was no association between maternal disclosure and sibling support for later-born siblings). There was a small positive association between general disclosure and competence in appearance such that the more later-born siblings disclosed general information to mothers, the more competent they were in their appearance whereas when earlier-born siblings disclosed generally to mothers, it was associated with greater general body-esteem.

When later- and earlier-born siblings disclosed about positive and negative body-related issues to mothers and siblings, they also had better self-worth (this association was not true of later-born siblings' body-disclosures to siblings or earlier-born siblings' negative body disclosures to mothers and siblings). Both later-born and earlier-born siblings reported greater sibling support when disclosing about body-issues to mothers and siblings. Positive body disclosures to mothers were associated with greater body-esteem (this was also true for later-born siblings' positive body disclosures to earlier-born siblings) and greater physical appearance competence. Disclosures of negative body-related issues were associated with greater body-esteem when disclosing to mothers (for earlier-born siblings) and siblings (for later-born siblings) and greater competence in physical appearance when disclosing to mothers (for later-born siblings) and siblings (for earlier-born siblings). Siblings who reported greater self-worth also reported greater sibling support (only for later-born siblings), general body-esteem, and competence in

physical appearance. Siblings who reported more sibling support also reported better body-esteem.

Self-worth based on appearance (contingencies of self-worth) was negatively and moderately associated with the other two body measures such that the more one bases his worth on appearance, the less general body-worth and competence in physical appearance he has. Body-esteem and competence in physical appearance were moderately positively associated such that the more body-esteem one has, the more competence she places in her physical appearance.

Overall, it appears that disclosing to a mother or sibling about general or body-related issues (either positive or negative) is associated with positive adjustment and body/appearance evaluations. Interestingly, more frequent disclosure of negative body-issues was not associated with negative perceptions of one's body.

To clarify siblings' use of disclosure, three 2 (ordinal position: earlier-born v. later-born sibling) X 4 (Sex Composition: male-male, female-female, male-female, female-male) mixed model ANOVAs of individuals' reports of disclosure to a sibling were run separately for general, body-positive, and body-negative disclosure with ordinal position as a repeated measure (see Table 3 for means and standard deviations by sex composition and ordinal position). There were no significant sex or ordinal position differences for general, body-positive, or body-negative disclosure. Overall, all age and sex compositions disclosed at relatively similar frequencies for general and body-related disclosures. Despite a lack of differences in disclosure rates by ordinal position and sex composition, these contextual variables may still moderate the associations between sibling disclosure and outcomes.

Actor-Partner Interdependence Models

Due to the nested design of the data (individuals nested within dyadic sibling relationships) and the important contribution of both individuals within the dyad, the Actor-Partner Interdependence Model (APIM; Kenny et al., 2006) was utilized to test earlier- and later-born adolescent siblings' associations between three types of sibling disclosure (general, positive body-related, and negative body-related) and individual (self-worth and three forms of body evaluations) and dyadic (sibling support) outcomes. All parameter estimates were estimated using Mixed procedures in SPSS 20. One advantage of APIM is the use of both dyad members' data and, as an extension of multilevel modeling, the true sample size (as it relates to power estimates) is estimated to be somewhere between the number of individuals (202 in the present study) and the number of dyads (101 in the present study) within the sample. Given that APIM uses both members of a dyad, this produces both "actor" (within individual) and "partner" (across members of the dyad) effects. Within this structure, individuals of a dyad operate as both an actor and a partner. For clarity, hereafter, all actor-effects will refer to "adolescents" (or boys/girls) and partner-effects will refer to their "siblings" (or brother/sister). When interactions were tested, significant (or marginally significant) interactions were graphed and simple slopes analyses were calculated for interpretation (Aiken & West, 1991). Only the highest order interactions were interpreted (e.g., if there was a significant ordinal position by disclosure interaction and a significant ordinal position by sex by disclosure interaction, only the three-way interaction was interpreted).

General disclosure.

Associations of general disclosure to siblings with sibling support. Analyses in this section tested the association between disclosures about general information (i.e., dating, school, and friendships) on the supportiveness of the sibling relationship. Initially four-way, three-way, and two-way interactions were tested, but there were no significant interactions between disclosure and ordinal position or sex. Thus, the final model only included control variables and main effects of disclosure. Sibling support was the dependent variable which was predicted by the control variables of: general disclosure to mother, ordinal position, adolescent sex, and adolescent age (see Table 4 for all general disclosure models).

Both adolescent (actor) and sibling (partner) main effects were significant such that the more siblings generally disclosed to one another, the greater their reports of sibling support.

Associations of general disclosure to siblings with self-worth. Analyses in this section tested the association between disclosures about general information on self-worth. Initially four-way interactions were tested (i.e., ordinal position X adolescent sex X sibling sex X siblings' general disclosure) but none of these interactions were significant, thus the final model was run with three-way and lower order interactions. Similar to sibling support, self-worth was the dependent variable which was predicted by the same controls as sibling support.

Disclosure to mother was marginally significant such that the more children disclosed generally to their mothers, the better their self-worth. Adolescent (actor) and sibling (partner) main effects for general disclosure were non-significant, but there was a significant three-way interaction with adolescent sex, sibling sex, and sibling disclosure

such that the more sisters (partner) disclosed general information to adolescent boys (actor), the less self-worth boys had (sibling/partner effect; see Figure 1.A).

Additionally, there was a significant two-way interaction with adolescent sex and adolescent disclosure such that the more girls disclosed generally to their siblings, the higher girls' self-worth (adolescent/actor effect; see Figure 1.B).

Associations of general disclosure to siblings with body-esteem. Analyses in this section tested the association between disclosures about general information on body-esteem. Initially four-way, three-way, and two-way interactions were tested, but there were no significant interactions between disclosure and ordinal position or sex. Thus, the final model only included control variables and main effects of disclosure. Similar to sibling support and self-worth, body-esteem was the dependent variable which was predicted by the same controls with the addition of body mass index (BMI).

There was a significant finding for Body Mass Index such that the heavier an individual was, the lower his/her body-esteem. Also, there was a significant finding for adolescent (actor) sex such that boys reported higher body-esteem than girls. There was a marginally significant main effect for adolescent (actor) disclosure such that the more an adolescent disclosed generally to his sibling, the higher his body-esteem.

Associations of general disclosure to siblings with appearance-related self-worth. Analyses in this section tested the association between disclosures about general information on the extent to which one bases his/her self-worth on appearance. The final model included the full model, with adolescent and sibling four-way interactions. Similar to body-esteem, appearance-related self-worth was the dependent variable which was predicted by the same controls.

There was a significant sibling (partner) main effect such that the more siblings generally disclosed to adolescents, the more adolescents based their self-worth on their appearance. This main effect was qualified by a marginally significant four-way interaction with ordinal position, adolescent sex, sibling sex, and adolescent disclosure such that the more later-born girls disclosed general information to their earlier-born sisters, the less later-born girls based their self-worth solely on appearance (adolescent/actor effect; see Figure 1.C).

Associations of general disclosure to siblings with competence in physical appearance. Analyses in this section tested the association between disclosures about general information on competence in one's own physical appearance. Initially, four-way interactions were tested but there were no significant results, thus a final model was run with three-way and lower order interactions. Similar to body-esteem and appearance-related self-worth, competence in physical appearance was the dependent variable which was predicted by the same controls.

There was a significant finding for BMI such that the heavier an individual, the less physically competent she reported herself to be. Additionally, there was a significant main effect for sibling (partner) disclosure such that the more siblings disclosed generally to adolescents, the less competent adolescents felt they were in their physical appearance. This main effect was qualified by a significant three-way interaction with adolescent sex, sibling sex, and sibling disclosure such that the more sisters (partner) disclosed general information to adolescent boys, the less competence boys' had in their physical appearance (sibling/partner effect; see Figure 1.D). Additionally, there was a second significant interaction with ordinal position, adolescent sex, and adolescent disclosure

such that the more earlier-born adolescent girls disclosed generally to their siblings, the more competent adolescent girls were in their physical appearance (adolescent/actor effect; see Figure 1.E).

Positive body-related disclosure.

Associations of positive body-related disclosure to siblings with sibling support.

Analyses were also run to test associations with specific types of disclosure, namely positive and negative body-related disclosures. Analyses in this section tested the association between positive body-related disclosure (e.g., body satisfaction, physical attractiveness, and body health) on sibling support. Four-way interactions were dropped due to non-significance and thus the final model included three-way and lower order interactions. Sibling support was the dependent variable predicted by the same controls as general disclosure (with the inclusion of BMI for all positive body-related disclosures; see Table 5 for all positive body-related disclosure models).

Both adolescent (actor) and sibling (partner) main effects were significant such that the more adolescents and siblings disclosed positive body-related issues to each other, the greater support adolescents reported. These main effects were qualified by two significant ordinal position by adolescent sex interactions. First, the more later-born girls and earlier-born boys and girls disclosed about positive body-related issues to their siblings, the more sibling support adolescent boys and girls reported (adolescent/actor effect; see Figure 2.A). Second, the more later-born siblings (partner) disclosed positive body-related issues to earlier-born boys (actor), the more support earlier-born boys reported (sibling/partner effect; see Figure 2.B).

Associations of positive body-related disclosure to siblings with self-worth.

Analyses in this section tested the association between positive body-related disclosure on the dependent variable, self-worth. Four-way interactions were dropped due to non-significance and thus three-way and lower order interactions were run in the final model.

There was a marginally significant finding for disclosure to mothers such that the more children disclosed positively about their bodies to mothers, the higher their self-worth. Although the adolescent (actor) and sibling (partner) main effects were non-significant, there were two significant interactions. A significant adolescent sex, sibling sex, and sibling disclosure interaction revealed that the more brothers (partner) disclosed to adolescent girls (actor), the lower girls' self-worth was (sibling/partner effect; see Figure 2.C). Additionally, a significant two-way interaction with adolescent sex and adolescent disclosure showed that the more girls disclosed to their siblings, the better girls' self-worth (there was a negative non-significant trend for boys to show the opposite result; adolescent/actor effect; see Figure 2.D).

Associations of positive body-related disclosure to siblings with body-esteem.

Analyses in this section tested the association between positive body-related disclosure on the dependent variable, body-esteem. Four- and three-way interactions were dropped due to non-significance and thus two-way interactions, main effects, and controls were run in the final model.

There was a significant finding for BMI such that the heavier an individual, the lower his body-esteem. Additionally, there was a significant finding for disclosure to mother such that the more children disclosed positive body information to mothers, the higher their body-esteem. Additionally, there was a marginally significant finding for

age such that older individuals reported higher body-esteem than younger individuals. Adolescent (actor) and sibling (partner) main effects were non-significant, but there were several significant two-way interactions. The more adolescent girls disclosed positively about their bodies, the better their body-esteem (adolescent/actor effect; see Figure 2.E). Additionally, there were two significant sibling effects such that the more earlier-born siblings (partner) disclosed positive body issues to adolescents (actor), the lower adolescents' body-esteem (see Figure 2.F). Also, the more siblings (partner) disclosed positively to adolescent girls (actor), the worse the body-esteem of those girls (see Figure 2.G). There was an additional marginally significant sibling sex and adolescent disclosure interaction, but the simple slopes were non-significant and thus, could not be interpreted.

Associations of positive body-related disclosure to siblings with appearance related self-worth. Analyses in this section tested the relation between positive body-related disclosure on the dependent variable, appearance-related self-worth. The final model included the full model, with adolescent and sibling four-way interactions.

There was a significant adolescent (actor) sex finding such that the more adolescents disclosed about positive body issues to their siblings, the more emphasis adolescents placed on their physical appearance to gain self-worth. Additionally, there was a significant sibling (partner) main effect such that the more siblings disclosed about positive body issues to adolescents, the more adolescents' self-worth was dependent on their physical appearance. There was a marginal four-way interaction found, though testing the simple slopes revealed non-significant differences.

Associations of positive body-related disclosure to siblings with competence in

physical appearance. Analyses in this section tested the association between positive body-related disclosure on the dependent variable, competence in physical appearance. Initially four- and three-way interactions were run, but were dropped in the final model due to non-significance. Thus the final model included two-way interactions, main effects, and control variables.

There was a significant finding for BMI such that the heavier an individual, the lower his competence in his physical appearance. Additionally, there was a significant finding for disclosure to mother such that the more children disclosed positive body information to mothers, the more competent they were in physical appearance. There was also a significant sibling (partner) sex finding such that having a brother was associated with adolescents being more competent in their physical appearance than having a sister. There were no significant adolescent or sibling main effects. A significant adolescent sex and adolescent disclosure interaction was significant such that the more adolescent boys disclosed positively about their bodies to siblings, the less competence boys had in their physical appearance (adolescent/actor effect; see Figure 2.H).

Negative body-related disclosure.

Associations of negative body-related disclosure to siblings with sibling support.

Finally, additional analyses were run to test associations with negative body-related disclosure (e.g., body dissatisfaction, poor health, and dieting). In this section, analyses tested the association of negative body-disclosure on sibling support (with the same control variables as positive body-related disclosure; see Table 6 for all negative body-

related disclosure models). Non-significant four-way interactions were dropped and thus three-way and lower order interactions were run in the final model.

A significant adolescent (actor) main effect revealed that the more adolescents disclosed negatively about their bodies to siblings, the more support adolescents reported. Initially, two three-way interactions were significant, but the simple slopes were non-significant, thus further interpretation could not be offered.

Associations of negative body-related disclosure to siblings with self-worth.

Analyses in this section tested the association of negative body-related disclosure on self-worth. Four- and three-way interactions were removed from the analyses due to non-significance, and therefore two-way interactions, main effects, and control variables were included in the final model.

There was a significant sibling (partner) sex finding such that adolescents with brothers reported lower self-worth than adolescents with sisters. Disclosure main effects were non-significant, but there was a significant adolescent sex and adolescent disclosure interaction such that the more adolescent boys and girls disclosed negatively about their bodies, the lower boys' and the higher girls' self-worth (adolescent/actor effect; see Figure 3.A). There was an additional sibling sex and adolescent disclosure interaction, but testing the simple slopes revealed non-significant differences, thus further interpretation could not be offered.

Associations of negative body-related disclosure to siblings with body-esteem.

Analyses in this section tested the association of negative body-related disclosure on body-esteem. Non-significant four-way interactions were dropped, thus three-way and lower order interactions were used in the final model.

There was a significant finding for BMI such that the heavier an individual, the lower his body-esteem. Main effects of disclosure were significant, revealing that the more adolescents (actor) disclosed about negative body-related issues to siblings, the higher adolescents' body-esteem. Additionally, the more siblings (partner) disclosed about negative body-related issues to adolescents, the lower adolescents' body-esteem. The adolescent/actor main effect was qualified by a significant adolescent sex, sibling sex, and adolescent disclosure interaction suggesting that the more adolescent girls disclosed about negative body-related issues to their brothers and sisters, the greater adolescent girls' body-esteem was (adolescent/actor effect; see Figure 3.B).

Associations of negative body-related disclosure to siblings with appearance related self-worth. Analyses in this section examined the association of negative body-related disclosure on appearance-related self-worth. All four-, three-, and two-way interactions were non-significant, thus the final model was run with adolescent and sibling main effects and controls.

There was a significant adolescent (actor) sex finding such that girls based more of their self-worth on perceptions of their physical appearance than boys. There was a significant main effect for siblings (partner) such that the more siblings disclosed negative body-related issues to adolescents, the more adolescents' self-worth was dependent on perceptions of their appearance.

Associations of negative body-related disclosure to siblings with competence in physical appearance. In the final analysis of disclosure, this section examined

the association between negative body-related disclosure and competence in physical appearance. Non-significant four- and three-way interactions were dropped, with a final model of two-way interactions, main effects, and control variables.

There was a significant finding for BMI such that the heavier an individual, the lower his competence in his physical appearance. There was also a significant sibling (partner) sex finding such that adolescents with brothers were more competent in their physical appearance than adolescents with sisters. A marginally significant main effect for adolescents (actor) revealed that the more adolescents disclosed about negative body-related issues to their siblings, the more competence in physical appearance adolescents had. This main effect was qualified by a significant adolescent sex and adolescent disclosure interaction such that the more adolescent girls disclosed negative body-related issues to their siblings, the more competent girls were in their physical appearance (adolescent/actor effect; see Figure 3.C).

CHAPTER 4

DISCUSSION

The purpose of Study 1 was to clarify the associations between three types of sibling disclosure (general, body positive, and body negative) with relational (i.e., sibling support) and individual (i.e., self-worth and body competence/worth) outcomes. Furthermore, sibling ordinal position, individual sex, and sex composition were examined as moderators of these relationships. In general, the results revealed that greater sibling disclosure, regardless of the content of the disclosure, procured positive outcomes for the sibling relationship, although individual adjustment for females was often more positive than for males. Additionally, when present, associations between disclosure and the outcome variables appeared to be equally as strong for later- and earlier-born siblings. Finally, outcomes were often more positive when adolescents' disclosure associated with their own outcomes (actor effects) than when siblings' disclosure associated with adolescents' outcomes (partner effects).

General Sibling Disclosure

Associations with siblings' general disclosure revealed that the more siblings disclosed about school, family, and personal life, the more supportiveness both earlier- and later-born siblings perceived within the relationship, confirming the study hypothesis

(see hypothesis 1.A). These findings support previous work that has shown younger siblings do disclose about feelings (e.g., Dunn, 1998), school, friendship, and family issues (Howe, Aquan-Assee, Bukowski, Rinaldi, & Lehoux, 2000) and extends this work by revealing that these topics are still important points of discussion for adolescent siblings. Additionally, the current study highlights other important personal information that siblings disclose about including issues that parents might disagree with or get upset over (e.g., hanging out with friends when no adult is present, skipping school, and getting a tattoo) and illegal or unsafe issues (e.g., smoking and going to parties where alcohol is present). Indeed, though not a frequent part of conversations, siblings did disclose about these later issues up to 10% of the time. Thus, the present study clarifies that siblings do disclose to one another about a variety of general issues and that more disclosures are actually beneficial for the sibling relationship.

Greater general disclosure was also associated with internal adjustment. When adolescents disclosed more frequently about general issues, they also reported higher self-worth (for girls who disclosed) and body-esteem. Also, later-born girls' general disclosure was associated with less dependence solely on appearance for one's worth when disclosing to sisters. Additionally, the more earlier-born girls generally disclosed to their siblings (brothers or sisters), the better they felt about their physical appearance. These findings confirm the hypothesis that greater disclosure would be associated with a healthier, more positive view of one's self and body (see hypothesis 1.B). These results also partially support the moderation hypothesis that significant results were for adolescent females and sister-sister dyads (see hypothesis 1.D), though the current findings revealed that, in some instances, sisters disclosed regardless of whether they had

a sister or brother. The latter finding (sisters disclosing to brothers and sisters both) is somewhat contrary to previous work suggesting that later-born sisters preferred to disclose more to a sister than a brother (Buhrmester, 1992; Howe, Aquan-Assee, & Bukowski, 1995). Nevertheless, the current study suggests that greater disclosure of general issues to both sisters *and* brothers is associated with females feeling better about their physical selves.

In opposition to the positive outcomes females received from greater general disclosure, greater disclosure from sisters to adolescent boys was associated with less self-worth and feeling worse (less competent) about one's physical appearance for boys. Thus, it wasn't necessarily that associations were strongest for female-female dyads, although when the sex of both siblings was significant, females experienced positive outcomes (when disclosing) whereas males experienced negative outcomes (when receiving disclosures). The finding that in some instances, males experienced an association between disclosure and outcomes was surprising based upon previous research (see hypothesis 1.D; e.g., Cole & Kerns, 2001). This finding was also for opposite-sex pairs, which was not hypothesized. The fact that the male association goes in the opposite direction of what was predicted overall reveals that this finding isn't just a matter of strength, but it is also a matter of degree. That is, the finding that females would show the strongest association between general disclosure and positive outcomes was supported in some instances, but the finding for males revealed that greater disclosure by a sister was actually associated with negative outcomes.

Given that relationships are particularly important for the relational well-being of females (Cole & Kerns, 2001; Dunn, Slomkowski, & Beardsall, 1994), it seems that

when females are able to disclose more to siblings, and therefore invest more in that relationship, that they feel better about themselves. Though non-significant, the slopes for brother-brother disclosure showed positive trends (greater self-worth and competence) suggesting that it mattered who was disclosing to boys. Apparently, boys showed a trend for better adjustment when they received disclosures from another brother as opposed to a sister. Thus, girls gained positive outcomes regardless of the sibling they were disclosing to, but boys being disclosed to by brothers seemed to be unrelated to potentially positive, whereas boys receiving disclosures of sisters was negative. Boys may have fared worse with disclosures from sisters due to the fact that opposite-sex siblings are less close and show less warmth and prosocial behaviors than same-sex siblings (Buhrmester & Furman, 1990; Kim, McHale, Osgood, & Crouter, 2006). Boys may have therefore actually been bothered by sisters' greater disclosure perhaps because they perceived these disclosures as invasions of their personal space or they might have felt uncomfortable by this level of intimacy. Girls, on the other hand, appeared to garner positive outcomes simply by disclosing to any sibling and therefore may have maintained a personal feeling of warmth and togetherness within the relationship, facets of the sibling relationship that are particularly important to females (Cole & Kerns, 2001).

Within the interactions, ordinal position did play a moderating role in the relationship between disclosure and body evaluations, but not for sibling support or self-worth (see hypothesis 1.C). Later-born sibling disclosures were associated with later-borns' less dependence solely on appearance for one's worth (i.e., later-borns were more likely to base their appearance on a variety of factors, not just appearance, when their general disclosures were greater). Although, when earlier-born siblings disclosed, they

felt more physically competent. Thus, when ordinal position mattered, both later- and earlier-born disclosures significantly contributed to the relationship between disclosure and body evaluations. Interestingly, the disclosures of an earlier- or later-born adolescent were only associated with the individual, not the other sibling. These findings do not wholly support previous work that younger and later-born siblings are more invested in the relationship than older and earlier-born siblings and therefore are more likely to disclose in the relationship and are more strongly affected by changes in the relationship (Buhrmester, 1992; Buhrmester & Furman, 1990), though this work was conducted with younger siblings. Perhaps as siblings move into adolescence, the increases in egalitarianism allow both earlier- and later-born siblings to invest more deeply in the sibling relationship and therefore disclose more similarly to one another than when a more hierarchical relationship was present in their youth (Dunn, 1993).

Positive Body-Related Sibling Disclosure

As with general disclosure, greater positive body disclosure was also related to greater sibling support (see hypothesis 2.A). When later-born girls and earlier-born boys and girls disclosed more about positive body issues, they also rated their sibling relationship as high in support. Whereas when later-born siblings disclosed more positive body information, earlier-born boys rated the relationship as more supportive. Thus, these findings support the hypothesis that greater disclosure would be associated with greater perceptions of sibling support. Though these results support previous findings that females perceive support within their sibling relationships (Furman & Buhrmester, 1985; 1992; Tucker, Barber, & Eccles, 1996), the current study also found that males were just as likely to report supportiveness in the relationship (earlier-born

males reported this support when disclosing and receiving disclosures). Additionally, previous work showing that, in general, later-borns perceive greater support than earlier-borns in the relationship (Branje, van Lieshout, van Aken, & Haselager, 2004), was not fully supported in the present study (although this work assessed support, not the association between disclosure and support; see hypothesis 2.C). Interestingly, when taking into account the relationship between disclosure and support, it was more often that earlier-borns perceived support within the relationship than vice versa. Given that this support was in the context of positive body-related disclosure, it could be that earlier-borns gained unique facets of support from their younger counterparts such as greater encouragement or optimism. Indeed, younger children tend to be overly optimistic about body appearance, believing that unfavorable traits (i.e., being overweight) can easily be changed and that favorable traits (i.e., being physically fit) will remain stable over time (Lockhart, Chang, & Story, 2002). Thus, if earlier-born siblings are receiving more encouragement from their later-born siblings to feel positively about their bodies, when earlier-borns express more disclosures about positive body-related issues they may express more support because later-borns may be overly optimistic about these disclosures.

Also in connection with general disclosure, positive body disclosure showed mixed results for internalizing outcomes based on sex (see hypotheses 2.B and 2.D). Greater positive body disclosure of brothers was associated with adolescent girls' lowered self-worth and adolescent boys' positive body disclosures were associated with less sense of competence in their physical appearance. Also, greater disclosure of siblings was associated with adolescent girls' and later-born adolescents' lower body-

esteem. The only positively associated outcomes were for greater disclosure of girls' body-talk to their own self-worth and body-esteem. Importantly, these findings were above and beyond the significant findings for positive body disclosures to mothers, indicating that in addition to the disclosures adolescents shared with mothers, sibling disclosures significantly contributed to adolescents' adjustment. Additionally, a sibling (partner) main effect for appearance-related self-worth suggested that adolescents' self-worth was dependent on perceptions of physical appearance when siblings' disclosed more about positive body-related issues.

Based on the above results, greater disclosure of positive body-related issues was often associated with negative internal adjustment (contrary to the hypothesis), particularly for the sibling receiving the disclosure. This may in part be due to the pressures our society places on men and women to look a certain way and to compete with others to obtain certain beauty standards (e.g., Poran, 2006). It could be that individuals who receive a large amount of disclosure about their sibling's positive body image feel a greater sense of competition or envy with their disclosing sibling that is associated with the receptor of the disclosure feeling worse about his/her own body. Furthermore, the more important physical appearance is to adolescents, the greater their body surveillance and reduced appearance satisfaction (Overstreet & Quinn, 2012). Thus, if one sibling rates attractiveness as an important quality (as most adolescents do; Harter, 1988), and the other sibling continues to disclose positive aspects of her appearance, the combination of these factors may be associated with adolescents just feeling worse in general and more specifically feeling worse about their bodies.

The hypothesis that greater positive body-related disclosure and the outcome variables would be stronger for later-born than earlier-born siblings was partially supported (see hypothesis 2.C). This relationship was evident with self-worth, body-esteem, and to a degree with sibling support, although earlier-born siblings reported just as strong a relationship with positive body disclosure and support as later-borns did. Evidently, when siblings are discussing positive aspects of their bodies, ordinal position appears to be an important indicator of the relationship between disclosure and individual outcomes, but it does not appear to be as important of a factor in relational outcomes.

Negative Body-Related Sibling Disclosure

Finally, results from the negative body-related disclosure support the hypothesis that greater disclosure would be associated with greater sibling support (see hypothesis 3.A). This confirms previous work with peers that even when dyads are disclosing about negatively-valenced issues (Rose, 2002), the warmth and support that disclosure promotes (Howe et al., 2000; 2001) are still evident within the relationship. Thus, as seen in each type of disclosure, it did not matter what the subject matter was, the more siblings disclosed, the better they felt about their sibling relationship (as seen through greater reports of support) regardless of sibling ordinal position or sex composition.

In partial support of the hypothesis, the more boys disclosed negatively about their bodies, the worse their self-worth, although surprisingly, girls showed the opposite pattern (girls' greater disclosure was associated with their self-worth being higher; see hypotheses 3.B and 3.D). It could be that given females' greater investment in relationships and their greater well-being when experiencing intimate relationships (Cole & Kerns, 2001; Dunn, Slomkowski, & Beardsall, 1994), that females felt better about

themselves within the context of disclosing relationships, no matter what the context of those disclosures. It might also be that through the process of disclosing, females are coming up with better ways to deal with their body dissatisfaction. Thus, the presence of more disclosure (and therefore greater support and warmth) may trump some of the negative effects there may be when focusing on negative body-related disclosure for females. These findings are in opposition to previous peer research (Rose, 2002) associating excessive disclosure of negatively-valianced events with greater internalizing symptoms; although the previous work focused on rehashing problems in general and was not specific to body-related disclosures.

In conjunction with the above notion, the more adolescent girls disclosed to their siblings about negative body-related issues, the greater girls' body-esteem and the more competent girls were in their physical appearance (see hypotheses 3.B and 3.D). Though these findings do not confirm the hypothesis that greater negative body-related disclosure would be associated with less body-worth/competence, this does support the hypothesis that the association between disclosure and the outcome variables would be stronger for females than males. Though it appears that greater disclosure to one's sibling about one's body (even negative disclosure) appears to be associated with positive outcomes for females, adolescents who received more disclosures about negative body-related issues did depend more on their appearance for their self-worth (confirming the hypothesis). Thus, disclosure of body issues may help an adolescent feel better about herself, but when these disclosures are negatively focused they also elevate physical appearance to a less healthy level (e.g., in order to feel worthwhile, one must be perceived by self and others as attractive), although this specific association still needs to be tested.

The moderation hypothesis that negative body-related disclosure would have a stronger relationship to the outcome variables for later-born siblings than for earlier-born siblings was not confirmed (see hypothesis 3.C). There were no ordinal position moderations found in the present analyses. Thus, similar to the results for some of the general and positive body-related disclosures, it appears that ordinal status is not as important when disclosing about body-related issues. Perhaps the focus of body issues is so general and comprehensive (even young children have perspectives on their bodies; Field et al., 1999; Gardner, Friedman, & Jackson, 1999) that both siblings are looking to one another equally to disclose about these issues.

Conclusions

Overall, sibling disclosure, regardless of the type, is associated with supportiveness within the relationship. And although disclosure appears to be particularly positive for female siblings, male siblings appear to be at greater risk for negative outcomes (especially when receiving disclosures from a sibling). Additionally, siblings more often experienced positive outcomes from their own disclosures as opposed to receiving the disclosures of siblings.

Though past research has shown the importance of sibling disclosure in childhood (Howe et al., 2000; 2001), the current study further extends this work by showing that sibling disclosure throughout adolescence and emerging adulthood is also important. Additionally, many of these significant findings were above and beyond disclosures to mothers, suggesting that siblings meaningfully contribute to one another's relational and individual adjustment even during a period of development where adolescents are disclosing less to one another. Furthermore, the current study expands previous research

by revealing that disclosure of activities and body-related issues (not just feelings) is also important when examining disclosure in siblings. Also, all of the body evaluations were significant for each type of disclosure, suggesting that when siblings engage in disclosures, appearance-related outcomes are of great importance to adolescents (and are both positively and negatively influenced depending on the type of disclosure and the ordinal position and sex of each individual). Finally, both earlier- and later-born siblings appeared to disclose and be influenced by those disclosures similarly, suggesting that during adolescence, siblings' more egalitarian relationship promotes more equality and mutual sharing within the sibling relationship. Clearly, siblings are an important source of disclosure, associating with both positive and negative outcomes.

Although the current study examined disclosure of many different behaviors, feelings, and thoughts, there is still need for further investigation of sibling disclosure. First, the present study examined siblings that were living within the same home. It is probable that when one sibling leaves the home (either for college or to move into the job market), that disclosure lessens between siblings, but to date, this relationship has not been examined. It is clear though, based on the present study that sibling disclosure remains an important relational feature of the sibling dyad from childhood through early adulthood.

Second, the present study did not assess whether disclosures to a sibling were replications of disclosure to parents/friends or unique disclosures to siblings, although the present study did control for disclosures to mothers. Thus, the current findings show that over and above what adolescents are telling their mothers, what adolescents tell their siblings has a significant and unique contribution. Yet, it is not clear whether siblings

who disclose to one another are sharing private information that only the other sibling knows, or sharing information that has already been or will be disclosed within other relational contexts as well (i.e., parents/friends). It is likely that sibling disclosures represent both aspects—that siblings are using one another as an additional source to share “common knowledge” information *and* that siblings are special confidants that receive information that no other dyadic partner receives.

Third, the individual adjustment outcomes examined in the present study focused on internal adjustment. It would be interesting to further investigate external adjustment such as school achievement, regulation of behaviors, and social competency. It could be that siblings who disclose more to one another will show better performance in other areas of life, particularly for females and those that are disclosing. Nevertheless, the present study contributes to our current knowledge of sibling relationships by better understanding what siblings talk about and how these discussions are associated with the health of the relationship and the individual.

CHAPTER 5

INTRODUCTION

STUDY 2

Sibling Psychological Control

An intriguing facet of the sibling relationship is the balance between positive/prosocial behaviors with equally intense negative/conflictive behaviors (e.g., Ross, Ross, Stein, & Trabasso, 2006). Indeed, a typical feature of sibling relationships includes negatively-associated behaviors such as control and manipulation (e.g., Updegraff, McHale, & Crouter, 2002). In effect, though early to middle adolescent siblings report on positive increases in intimacy (i.e., closeness, support, acceptance, and satisfaction), they also report a sense of control over each other (i.e., being the boss of a sibling and making the sibling do or not do something) and that these behaviors are more common than with other dyadic relationships (e.g., friends; Updegraff et al., 2002). This combined positivity and negativity within the sibling relationship identifies this relationship as the quintessential “love-hate” relationship (McHale, Kim, & Whiteman, 2006) and therefore makes this dyad particularly unique. Though this research finds that siblings control one another, this does not necessarily mean that all types of control produce equally negative outcomes within the relationship or the individual. It is likely

that the more severe the control/manipulation, the greater the likelihood that this type of control could be associated with more negative outcomes.

One particularly noxious form of control, psychological control, has been shown to have severe consequences in other familial relationships (e.g. parent-child; Barber, 2002), and therefore, to the extent that siblings engage in similar forms of control, the results may be equally as damaging. Thus, given the negative association that psychological control has on well-being (Barber, 2002), it is important to study this construct in other familial contexts (i.e., the sibling relationship). Therefore, the present study seeks to examine sibling control beyond typical sibling rivalry and conflict (what the majority of sibling conflict literature has investigated; Buhrmester & Furman, 1990; Dunn, 1993; 2002) to examine a potentially more potent form of control and manipulation, psychological control, and its associations with sibling relationship quality and individual adjustment.

Considering that siblings have been shown to control one another even throughout adolescence (Tucker & Updegraff, 2010; Updegraff, McHale, & Crouter, 2002) and given the abundance of research on parents' use of psychological control, the lack of research specifically aimed at psychological control within the sibling relationship is surprising. Nevertheless, Conger, Conger, and Scaramella (1997) did examine the role that the entire family plays in the use of psychological control on early adolescents' adjustment. In this longitudinal study, one early to middle adolescent individual (target adolescents were in 7th grade at Time 1 and 9th grade at Time 2) from each family reported on the psychologically controlling behaviors (e.g. criticizing, using guilt trips, ignoring, and controlling) of their mother, father, and sibling. Half of the siblings were

older than the target sibling and half were younger (ranging in age from 9 to 18). For both time points, siblings' use of psychological control was positively correlated with internalizing (depression) and externalizing (antisocial feelings and behaviors) symptoms and negatively correlated with self-confidence in target siblings, though these relationships were slightly stronger for parents of target adolescents. Siblings' use of control was also positively correlated with parents' use of control. Boys and girls reported similar outcomes at Time 1, but at Time 2 girls reported more internalizing symptoms and boys reported more externalizing symptoms.

The findings from the Conger et al. (1997) study show a relationship between siblings' psychologically controlling behaviors leading to lower self-confidence, depression, and externalizing behaviors. Also, even if siblings changed in their degree of psychological control over time (e.g., decreasing their use of control), brothers and sisters did not report increases in positive outcomes (though they did for parents in some instances). Overall, the authors provided evidence that information about siblings' control offers meaningful information beyond that gained from parents' control of adolescents (Conger et al., 1997).

In spite of past research revealing that siblings do engage in psychological control (Conger, Conger, & Scaramella, 1997), the vast majority of psychological control research has concentrated on the parent-child relationship, and thus the basis of this construct is predominately understood from the parent-child perspective. From this perspective, psychological control has been defined as the manipulation of the parent-child bond where parents intrude upon children's psychological well-being through the hindrance of children's thinking, self-expression, emotions, and attachment to parents

(Barber, 2002). Even at a young age, children can distinguish this extreme form of control from other more balanced forms of control (Kuppens, Grietens, Onghena, & Michiels, 2009). Previous research shows support for the notion that some forms of parental control exhibit more U-shaped patterns where neither too much nor too little control is positive, but a balance of control where parents maintain some control and allow children/adolescents appropriate self-regulation is positive. Such forms of control include behavioral control, or the monitoring of a child's behavior (e.g., setting limits, establishing home and school responsibilities, and supervision), in order to maintain the well-being and safety of that child (Barber, 2002; Mayseless & Scharf, 2009). In opposition to this, previous research has predominantly viewed psychological control on a continuum where greater use of psychological control is related to greater negative outcomes for children/adolescents (e.g., Doyle & Markiewicz, 2005).

Parents who engage in psychological control use such manipulating behaviors as control through guilt, withdrawal of love, instilling anxiety, personal attacks, questioning family loyalty, fostering dependency on the parent, and blurring individual identity with family identity (Barber, 2002). Though parents use many ways of controlling a child for the benefit of that child (e.g., keeping the child safe and providing adequate boundaries), parents who psychologically control a child/adolescent disrupt the child's psychological world. For instance, a psychologically controlling parent may punish a child by telling that child he/she causes that parent distress or that the parent will love the child if he/she obeys the parent. This parent may also blame a child for others' problems, continually interrupt the child, or avoid the child when he/she displeases the parent. Thus, the presence of psychological control inevitably promotes unhealthy relationship dynamics

(Loukas, 2009). Furthermore, past research has shown psychological control to be orthogonal with more adaptive parental control (e.g., behavioral control; Barber, Olsen, & Shagle, 1994; Soenens & Vansteenkiste, 2010). Thus, it is apparent, at least in the parent-child dyad, that parents who engage in increased uses of psychological control establish unhealthy emotional and behavioral patterns with their children. Though these practices are very manipulating within the parent-child dyad, it is unclear to what extent these same practices are used within the sibling relationship. Thus, the current study extends past work by investigating more thoroughly the role that psychological control has within the sibling relationship. Importantly, the current investigation controls for mother's psychological control, thus the present study is assessing sibling psychological control over and above maternal psychological control and is not just a proxy for greater psychological control in the general household.

Though parent-child psychological control studies highlight the construct of psychological control, they represent an inherent hierarchy. Parents have greater control and authority over children, a dynamic that is not always present, or present to a much lesser degree, in sibling relationships. This should be particularly true of sibling relationships during adolescence, when sibling relationships are marked with greater egalitarianism (Buhrmester & Furman, 1990; Vandell, Minnett, & Santrock, 1987). In addition, these studies focus on unidirectional uses of this control. As a result of parents almost always maintaining more power over children than children do of parents, it is virtually unknown how this type of control could be used by multiple persons in the relationship (children often cannot exert this type of power and manipulation effectively over parents). Additionally, Conger and colleagues (1997) only used one target to assess

controlling behaviors, not the sibling dyad. Due to these significant distinctions and limitations, examining psychological control within a context that both dyadic members would be more likely to engage in highlights a strength of the current study. The present study seeks to examine a more egalitarian relationship, in this case, siblings, and how psychological control may be enacted by both dyadic members who have relatively equal amounts of power and authority (in comparison to the parent-child relationship).

Siblings who engage in psychological control may foster this behavior for several of the reasons that parents have been shown to use this type of control. Not only do children and adolescents learn through observation from psychologically controlling parents how to use this type of control to coerce others (Crick & Grotpeter, 1995; Soenens, & Vansteenkiste, 2010; Noller, Feeney, Peterson, & Sheehan, 1995), but they may use psychological control for their own perceived benefit. For instance, siblings may psychologically control one another because they may perceive this as the most effective way to manipulate a sibling into doing what they want. An additional possibility is that siblings (particularly earlier-born siblings) may wish to preserve their own status in the relationship in order to maintain dominance (similar to psychologically controlling parents; Soenens & Vansteenkiste, 2010).

As a result of the limited understanding of sibling psychological control, it is unclear what the associations are between this type of control and the well-being of the sibling relationship and the internal adjustment of each individual. Past research on parental psychological control has linked several negative emotional adjustment outcomes to children/adolescents including anxiety (social and attachment anxiety), depression (and dysphoria), low self-esteem, poor emotion regulation, less commitment

making, decreases in learning strategies for school work, poor coping, and poor adjustment to life transitions from childhood through emerging adulthood (Barber, 1996; Doyle & Markiewicz, 2005; Loukas, 2009; Luyckx, Soenens, Vansteenkiste, Goossens, & Berzonsky, 2007; Manzeske & Stright, 2009; Mayseless & Scharf, 2009; Wang & Pomerantz, 2007). Considering these severe outcomes from the parent-child literature, it is important to further investigate psychological control within the sibling relationship, as siblings have been shown to engage in similar behaviors (Conger et al., 1997).

Furthermore, these studies focus on the internal adjustment of children/adolescents but do not explore how this type of control relates to the well-being of the relationship itself (e.g., siblings' perceived supportiveness of the relationship). It is likely that because psychological control is related to so many negative outcomes, that this form of control is also detrimental to the relationship. The present study extends our knowledge of the associations psychological control has by investigating how this form of control associates with the health of the dyad (relational support), as well as that of the individual (self-worth and body worth/competence).

Previous research has found that adolescents report there should be clear boundaries as to which aspects of their lives a parent should have control over (Hasebe, Nucci, & Nucci, 2004). Parents who were too controlling, particularly regarding issues pertaining to personal rights of adolescents (e.g., who an adolescent's friends are, what an adolescent writes in his/her diary, and what clothes an adolescent wears), were rated by adolescents as psychologically controlling (Kakihara & Tilton-Weaver, 2009; Smetana & Daddis, 2002). Thus, this may be one possible reason why psychological control is related to negative outcomes. Psychological control is harmful because it intrudes on an

adolescent's personal rights, autonomy, and self-regulation and thus results in negative consequences for the child (Doyle & Markiewicz, 2005). Given that other work has shown that individuals who invade on the personal rights of their siblings report more negative sibling relationship quality (Campione-Barr & Smetana, 2010), as well as poorer emotional adjustment (Campione-Barr, Greer, & Kruse, 2013), I propose that perceptions individuals have of their sibling intruding upon their autonomy and ability to properly self-regulate (as evaluated by the present study's psychological control measure) will be considered psychologically controlling and will therefore be linked to negative outcomes for the individual and the dyad.

Although Conger, Conger, and Scaramella's work (1997) provides important information about the role siblings play in the use of psychological control, this relationship was only measured from one sibling's perspective. Thus, it is not clear to what extent this is a dynamic experience between siblings or generally one-sided. According to McGuire, Manke, Eftekhari, and Dunn (2000), older and younger siblings in late childhood (ranging in age from 7 to 13) blame conflict initiation on each other. Among the categories of conflicts siblings engaged in, controlling (telling the other sibling what to do) and rejecting (refusing to play with a sibling or rejecting the sibling) behaviors were included. This work supports the idea that siblings reciprocally engage in facets of controlling behavior. In instances where sibling psychological control is present, it may be likely that instead of a unidirectional approach, siblings instigate the use of this control in one another. Thus, one of the strengths of the present study is the use of Actor-Partner Interdependence Modeling to extend past work by investigating the perceptions of both siblings within the dyad.

Further distinguishing from Conger et al. (1997), the present study seeks to measure psychological control similarly to the way it has been measured in past research regarding parents' psychological control of their children. Conger et al.'s use of sibling rivalry items may miss some of the intricacies of psychological control as has been previously measured with parents. For instance, some items missing on the Conger et al. (1997) questionnaire include issues of family loyalty (e.g., a sibling questioning another sibling's loyalty or worth in family), erratic emotional behavior (e.g., being friendly to a sibling one moment and being hostile the next), and invalidating the feelings of a sibling. Including these items in a sibling psychological control measure may more adequately represent this type of control, or at least provide more comparable information to what has been gleaned by studies of parental psychological control.

A final limitation of this work was the absence of analyzing siblings' control by ordinal position and sex composition. Later-born siblings are generally more invested in the sibling relationship (Buhrmester & Furman, 1990); therefore, it is more likely that greater psychological control by an earlier-born sibling will be more problematic for these highly-invested later-born siblings than if the reverse were to occur. Also, female adolescents are generally more invested in social relationships (Cole & Kearns, 2001), and should therefore suffer more from the manipulative control of a psychologically controlling sibling than males because this control should work to separate the relationship, not bring siblings closer together. Additionally, previous sibling psychological control research has shown that siblings differentially suffer based on individual sex, with females reporting more internalizing symptoms and males reporting more externalizing symptoms over time (Conger et al., 1997). Thus, because the present

study is assessing internalizing outcomes (e.g., self-worth and body evaluations), females should report a stronger association between being psychologically controlled and experiencing more internalizing symptoms than males. Although Conger et al. (1997) revealed that both males and females were affected by their siblings' psychological control, this research did not examine multiple siblings in the same family, though other past research does show that sister-sister dyads tend to show both the highest levels of warmth but also the highest levels of conflict (Tucker, McHale, and Crouter, 2001). Therefore, both females and sister-sister dyads, being more invested in social relationships (Cole & Kearns, 2001) and showing the highest levels of conflict (Tucker et al., 2001), should therefore suffer more or differentially suffer (females suffer more internally whereas males suffer more externally from sibling psychological control over time; Conger et al., 1997) from the manipulative control of a psychologically controlling sibling than males and mixed-sex dyads.

By examining the moderation of associations between psychological control and relational and individual outcomes by structural variables (position in the family and sex), the present study contributes to our existing knowledge of sibling psychological control by examining all four sibling sex compositions with both siblings' perceptions of control using a measure that most accurately describes the nature of psychological control (as has been tested with parent-child dyads). Furthermore, because little is known about the outcomes of sibling psychological control, both relational (e.g., sibling support) and individual (e.g., self-worth and body evaluations) outcomes will be investigated to more fully understand this construct.

Dyadic and individual outcomes to sibling psychological control.

Sibling support. Previous research reveals that siblings do engage in psychological control (Conger, Conger, & Scaramella, 1997); however the research to date has not explored how this sibling process associates with the well-being of the sibling relationship. As suggested in Study 1, relationship support is often a good indicator of relationship well-being and because siblings do provide support for one another in their relationships during adolescence (Furman & Buhrmester, 1992), it is important to investigate how a caustic construct such as psychological control might be associated with such an important staple of healthy adolescent sibling relationships. Given the initial coverage of age and sex differences, developmental patterns, and general introductions of the dependent constructs in Study 1, Study 2's explanation of the dependent constructs (sibling support, self-worth, and body evaluations) will be primarily focused on how these constructs might be associated with psychological control.

Though siblings report warmth and closeness in their relationships, they also report power, conflict, and rivalry (Furman & Buhrmester, 1985). Given these oppositional behaviors, I propose that perceptions of support may fluctuate depending on the behaviors siblings engage in. Therefore, whereas sibling support was proposed to be related to disclosure due to the warm and trusting nature of disclosure (e.g., Howe et al., 2000), sibling support should be negatively related to psychological control due to the manipulative and conflictive nature of this type of control (e.g., Barber, 2002). Indeed, measures of sibling support are often negatively associated with control, conflict, relationship stability, and criticism (e.g., Furman & Buhrmester, 1985) and given that psychological control is often constructed from these behaviors/qualities (e.g., Barber, 2002), psychological control should be negatively associated with support. Additionally,

because siblings who report greater control (in general) report more contentious relationships (Tucker & Updegraff, 2010), siblings should report less support in the presence of greater psychological control.

The relationship between psychological control and sibling support should be moderated by ordinal position, individual sex, and sibling sex composition. In terms of ordinal position differences, because later-born siblings are generally more invested in the sibling relationship (Buhrmester & Furman, 1990), often looking to earlier-born siblings for support (Tucker, McHale, & Crouter, 2001), the association between psychological control and support should be stronger for later-born siblings perceiving greater control from earlier-borns than vice versa. Additionally, based on previous research that girls are often more invested in relationships and find intimacy to be particularly important for high quality close relationships (Branje et al., 2004; Cole & Kerns, 2001), females engaged in sibling relationships with higher rates of psychological control should be more likely to report less relational support due to the detrimental effects of psychological control than males who engage in more control. Past research has not examined sibling sex composition in regards to psychological control (Conger et al., 1997), although other research shows that female-female dyads tend to report greater closeness and contention simultaneously (Tucker, McHale, and Crouter, 2001) in association with being more invested in their relationships (e.g., Branje et al., 2004), and therefore female-female dyads should show the strongest association between control and the outcome variables compared to the other sibling sex compositions.

Self-worth. Though sibling psychological control has been linked to depression and externalizing behavior (Conger, Conger, & Scaramella, 1997), little beyond this is

known about other individual adjustment outcomes. As a result of increased parental psychological control resulting in lower child/adolescent self-worth (Barber, 1996), it is important to investigate whether this association is also present within the sibling relationship. Because the nature of psychological control includes the intrusion on an individual's internal world and questioning the validation and worth of that individual (Barber, 2002), self-worth should be closely tied to psychological control, regardless of the dyadic relationship being investigated.

The association between psychological control and self-worth can be better understood from an autonomy perspective. The presence of psychological control undermines adolescents' autonomy development by interfering with adolescents' ability to become independent and develop a healthy personal identity and sense of self (Barber, 1996; 2002; Smetana & Daddis, 2002). Furthermore, because psychological control undermines healthy self development, identity, and autonomy, adolescents subject to psychological control have a harder time establishing internal expectations that they are competent and effective individuals (Barber, 1996). Indeed, increased parental psychological control has been associated with low self-esteem and poor internal regulation and coping (e.g., Barber, 1996; Doyle & Markiewicz, 2005; Loukas, 2009). Furthermore, parents who psychologically control often inadvertently pass these behaviors down to children that are then more equipped to engage in similar behaviors with siblings (e.g., 1995; Soenens, & Vansteenkiste, 2010; Noller, Feeney, Peterson, & Sheehan, 1995), and thus siblings may be subject to the same adjustment outcomes as in the parent-child relationship. Therefore, it is likely that due to the instability and value-reducing nature of psychological control, siblings who are the recipients of psychological

control will have lower self-worth. Because siblings have higher self-worth when there is validation, support, harmony, and an overall positive relationship (Dailey, 2009; Franco & Levitt, 1998; Yeh & Lemper, 2004), the opposite should be true, that siblings who feel invalidated, unsupported, discord, and relationship negativity (all facets of psychological control), should have lower self-worth.

The relationship between psychological control and self-worth should be moderated by ordinal position, individual sex, and sibling sex composition. As in the relationship between psychological control and support, given that later-born siblings are generally more invested in the sibling relationship (Buhrmester & Furman, 1990), the more psychological control that is present in the relationship, the less stability and internal security later-born siblings are likely to perceive within that relationship. Therefore, the relationship association between psychological control and self-worth should be stronger for later-born siblings than for earlier-born siblings. Also, females are often more invested in relationships and find intimacy to be particularly important for high quality close relationships (Branje et al., 2004; Cole & Kerns, 2001), therefore, when psychological control is present, females should maintain a stronger association between higher rates of psychological control and lower self-worth than males given the relational disruption that psychological control inevitably promotes. Additionally, sister-sister dyads are typically both close and conflictive (Tucker, McHale, and Crouter, 2001), as well as more invested in the relationship (Cole & Kerns, 2001), therefore the negative association between psychological control and self-worth should be stronger for sister-sister dyads than all other sibling sex compositions.

Body evaluations. As Study 1 outlined, adolescents are often preoccupied with their body evaluations (e.g., Phares, Steinberg, & Thompson, 2004) and are sensitive to others' examination of their bodies (Elkind, 1967; 1981). Furthermore, adolescents experience lower self-esteem and more negatively rate their body evaluations in the presence of greater sibling criticism (Ata & Ludden, 2007). Also in line with Study 1, as body evaluations were defined as the degree of one's dependence on one's body evaluations to gain worth, esteem, and competence, body evaluations (a specified form of self-worth) should be closely linked to general self-worth. This should be especially true for those individuals who place more importance on their bodies (as many adolescents do) and therefore more often look to this domain to help define their overall self-worth (Crocker, Luhtanen, & Cooper, 2003).

Given this proposed link between body evaluations and self-worth, psychological control should have similar effects on body evaluations as self-worth. The potential connection between psychological control and body evaluations can be viewed from an autonomy perspective. As a result of psychological control undermining adolescents' ability to self-regulate and function independently (Barber, 2002), this control inhibits proper identity formation and autonomy development. Considering that autonomy development (both the promotion and inhibition of) has been associated with both positive and negative body evaluations, respectively (Clark & Tiggeman, 2007; 2008; Ogden & Steward, 2000), psychological control should be linked to body evaluations due to the heavy emphasis of autonomy restriction that psychological control displays (Barber, 2002). Though the direct connection between psychological control and body evaluations has not been made in previous research, past research has made links between

body evaluations and self-esteem (negative body evaluations are associated with lower self-esteem (Stice & Bearman, 2001; Yuan, 2010) and psychological control, self-worth, and self-competence (greater control is associated with lower self-worth and self-competence; Barber, 1996; Salafia, Gondoli, Corning, Bucchianeri, & Godinez, 2009; Snoek, Engels, Janssens, & van Strien, 2007), psychological control should be associated with the varying types of self-worth, including self-worth based on one's appearance.

Finally, parents that are over-controlling are five times more likely to have overweight children than are children of parents who use moderate and healthy levels of control (Rhee, Lumeng, Appugliese, Kaciroti, & Bradley, 2006). This work did not examine psychological control specifically, but this research supports the idea that relationships that are defined by higher levels of control (such as psychologically controlling relationships) are associated with individuals who have unhealthy bodies (and by extension, unhealthy body evaluations). Given that negative body evaluations are associated with children with higher BMIs (Bun, Schwiebbe, Schütz, Bijlsma-Schlösser, & Hirasing, 2011), psychological control should be connected to individuals' body evaluations (particularly negative evaluations). Therefore, the current study extends previous research by directly investigating the potential link between psychological control and individuals' body evaluations. Additionally, the present study will control for BMI to assess associations between psychological control and body evaluation outcomes beyond the effects of BMI.

As with the relationship between psychological control and self-worth, the association between psychological control and body evaluations should be moderated by ordinal position, individual sex, and sibling sex composition. In regards to ordinal

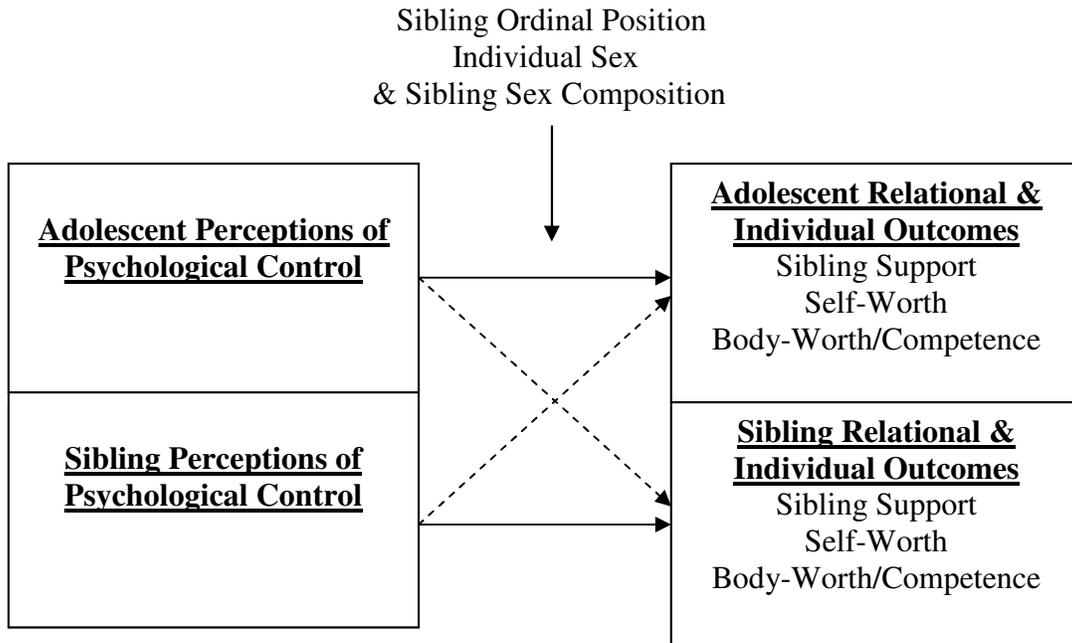
position, there should be a stronger relationship between psychological control and body evaluations for later-born siblings due to their greater investment in the sibling relationship than earlier-born siblings (Buhrmester & Furman, 1990). Also, given the greater importance for females to invest and find intimacy within relationships (Branje et al., 2004; Cole & Kerns, 2001), when psychological control is present, females should maintain a stronger association between higher rates of psychological control and lower body competence/worth than males who engage in more control. Likewise, sister-sister dyads should show a stronger relationship between psychological control and the body evaluation outcomes than all other sibling sex compositions given that sister-sister dyads show the most warmth and conflict (Tucker, McHale, and Crouter, 2001) in addition to being highly invested in close relationships (Branje et al., 2004; Cole & Kerns, 2001).

Present Study and Hypotheses

As in Study 1, Study 2 will also employ the use of Actor-Partner Interdependence Modeling. This analytic procedure is an important strength to the current study as it includes both actor (adolescent) and partner (sibling) effects (see the figure below). Individuals should be reporting on both their own perceptions of their siblings' psychological control and the relationship this control has to their adjustment/outcomes (actor effect) and the association of the siblings' reports of the individual's psychological control to the individual's adjustment/outcomes (partner effect). Though Conger and colleagues (1997) only assessed individual adolescent perspectives within sibling psychological control, the present study hypothesizes that the actor and partner effects for psychological control will both be similarly important for the outcome variables but also be dependant on who is administering and who is receiving the control. That is, given

that psychological control is so damaging to the recipient (e.g., Barber, 1996) and likely not as damaging to the person who is controlling/administering the control (perhaps due to perceptions of authority or dominance) the outcomes for the recipient (actor effect) should be more negatively associated with psychological control than for the administrator (partner effect).

Previous research underscores the importance of psychological control and the association this process has with relational well-being and individual adjustment (e.g., Barber, 2002). This research has almost exclusively focused on parent-child dyads to the near exclusion of sibling dyads (with the exception of one study; Conger, Conger, & Scaramella, 1997). Thus, the current study will correct this limitation by exploring the relationship between psychological control, sibling support, and individual adjustment (self-worth and body evaluations) from the sibling perspective. Additionally, Conger and colleagues (1997) did not investigate sibling structural factors or the dual representation of both siblings and therefore the current study will extend our understanding of sibling psychological control by examining ordinal position, individual sex, and sex composition from the perspective of both siblings. Given our very narrow understanding of how siblings engage in psychological control, the present hypotheses initiate a basis for clarifying the association between psychological control and potential sibling outcomes. Therefore, hypotheses were put forth for siblings' engagement in psychological control and the association with the outcome variables.



Note. Solid horizontal lines indicate actor effects. Dash diagonal lines indicate partner effects.

(1) Adolescents who perceive greater psychological control from their sibling will experience lower sibling support, self-worth, and body-worth/competence than adolescents who are the administrators of psychological control. This relationship should be moderated by siblings' position in the family, individual sex, and sex composition.

(1.A) Sibling support. When individuals report greater sibling control (in general; Tucker & Updegraff, 2010), they also report more contentious relationships. Thus, in the presence of psychological control, there should be a stronger relationship between those siblings who receive psychological control and less support than for administrators of control (though both siblings should report lower support).

(1.B) *Self-worth and body evaluations.* If the outcomes of sibling psychological control are similar to parental psychological control (lower self-worth in the parent-child dyad; e.g., Barber, 2002; Salafia, Gondoli, Corning, Bucchianeri, & Godinez, 2009), then adolescents should also perceive lower self-worth when experiencing sibling psychological control.

If individuals are defining some of their self-worth based on their body evaluations, similar patterns to general self-worth should emerge (i.e., less body worth and competence; Crocker, Luhtanen, & Cooper, 2003) in the presence of greater psychological control.

(1.C) *Moderating role of position.* Given later-born siblings' stronger investment in the sibling relationship (Buhrmester & Furman, 1990), the association between psychological control, support, self-worth, and body evaluations should be stronger for later-born siblings than for earlier-born siblings.

(1.D) *Moderating role of sex.* Because females find intimacy to be particularly important for high quality close relationships (Branje et al., 2004; Cole & Kerns, 2001), females engaged in sibling relationships with higher rates of psychological control should be more likely to report less support, self-worth, and body-worth/competence from these relationships than males who engage in more psychological control. Additionally, multiple females within the relationship (i.e., female-female sibling pairs) should be interested in the highest level of intimacy compared to brother-brother or mixed sex dyads but also show the highest levels of conflictive behavior (Tucker, McHale, & Crouter, 2001) and therefore sister-sister dyads should show the strongest association between control and the outcomes compared to the other three sex compositions.

CHAPTER 6

METHOD

Participants/Sample/Procedures

For Study 2, all participants and procedures were identical to Study 1. Study 2 used the same sample as Study 1.

Measures

Psychological control. The Psychological Control Scale—Youth Self-Report (PCS-YSR), a 16-item measure, was originally designed to assess adolescent reports of parental psychological control (Barber, 1996) but was used in this study to assess sibling and maternal (used as a control) control (see Appendix G for complete measure). These items assessed the extent to which individuals perceived the following behaviors from sibling/mother: constraining verbal expression, invalidating feelings, personal attack, guilt induction, love withdrawal, and erratic emotional behavior on a three-point scale (1 = not like sibling/mother to 3 = a lot like sibling/mother). The original PCS-YSR scale was submitted to factor analysis and retained items from 4 of the 6 categories (item 1 for invalidating feelings, items 2-3 for constraining verbal expressions, items 4-5 for personal attacks, and items 6-8 for love withdrawal). Although the original measure retracted eight items after factor analysis, reliability alphas for the current study for both

mothers and siblings were higher when all items were retained; therefore the full measure was utilized. Cronbach Alphas for maternal reports were .84 (later-born siblings) and .87 (earlier-born siblings) and for sibling reports were .83 (later-born siblings) and .82 (earlier-born siblings). Separate mean scores for later- and earlier-born siblings' psychological control for each relationship (maternal and sibling) were used in the final analyses. A higher score equals perceptions of receiving greater psychological control.

Outcome variables. Study 2 employed the same outcome variables as Study 1: sibling support, self-worth, and the three measures of body evaluation (body-esteem, appearance-related self-worth, and competence in physical appearance).

CHAPTER 7

RESULTS

Descriptive Statistics

Correlational analyses were run to compare the study demographic variables, psychological control, and the outcome variables separately for later- and earlier-born siblings (with the addition of variable means and standard deviations; see Table 2). Similar associations discussed in the Study 1 descriptive statistics will not be repeated (e.g., correlations among age, sex, and between body evaluation measures), only significant correlations with psychological control will be discussed. The older later-born siblings were, the higher the levels of maternal psychological control they reported. For both earlier- and later-born siblings, there was a moderate positive correlation with maternal and sibling psychological control such that the more an individual reported receiving psychological control from either a mother or sibling, the more likely he was to report receiving this control from the other family member as well. The use of psychological control by a mother or sibling was associated with lower sibling support ratings by the adolescent for both earlier- and later-born siblings. Finally, maternal psychological control was associated with later-born siblings' tendency to base their self-worth on appearance. Overall, psychological control by either a mother or sibling was

associated only with negative outcomes and was more likely to occur when a greater number of family members used this type of control.

To clarify siblings' engagement in psychological control, a 2 (ordinal position: earlier-born v. later-born sibling) X 4 (Sex Composition: male-male, female-female, male-female, female-male) mixed model ANOVA of individuals' reports of perceived sibling psychological control with ordinal position as a repeated measure was performed (see Table 3 for means and standard deviations by sex composition and ordinal position). Analyses revealed a main effect of ordinal position, $F(1, 97) = 4.62, p < .05, \eta^2 = .05$, which was qualified by a significant ordinal position X sex composition interaction, $F(3, 97) = 4.37, p < .01$. Though in general, later-born siblings perceived more psychological control from their earlier-born siblings than the reverse, this appeared to be particularly the case for later-born boys with earlier-born sisters, $t(19) = 3.91, p < .001$. There was also a marginally significant finding that suggested later-born girls with earlier-born sisters also perceived greater occurrences of psychological control, $t(32) = 1.83, p = .08$. Overall, psychological control was more often perceived by later-born siblings with earlier-born sisters.

Actor-Partner Interdependence Models

As in Study 1, Study 2 also employed the use of APIM.

Psychological control.

Associations of psychological control with sibling support. Analyses in this section tested the association between perceptions of receiving psychological control (e.g., blaming, criticizing, ignoring) on the supportiveness of the sibling relationship. Sibling support was the dependent variable which was predicted by the control variables

of: mother's use of psychological control, ordinal position, adolescent sex, and adolescent age. Additionally, the main effects of actor and partner psychological control as well as the interactions between psychological control and ordinal position and the sex of both siblings were included in the model. All four-way interactions were dropped due to non-significance. Therefore, the final model included three-way and lower order interactions (see Table 7).

There was a significant finding for maternal psychological control such that the more children perceived receiving psychological control from their mothers, the less sibling support they reported. There was also a marginally significant adolescent (actor) main effect such that the more psychological control adolescents perceived from their siblings, the less support adolescents reported. This main effect was qualified by a significant adolescent sex and adolescent psychological control interaction such that the more girls perceived being psychologically controlled by their siblings, the lower sibling support girls reported (adolescent/actor effect; see Figure 4.A). Additionally, a significant ordinal position, sibling sex, and sibling psychological control interaction emerged, although the slopes were only marginally significant, thus the results should be interpreted with caution. These results suggest that the more later-born brothers (partner) perceived receiving psychological control from earlier-born adolescents (actor), the more support adolescents reported. Also, the more later-born sisters (partner) perceived receiving psychological control from earlier-born adolescents (actor), the less support adolescents reported (sibling/partner effect; see Figure 4.B).

Associations of psychological control with self-worth. Analyses in this section tested the association between perceptions of receiving psychological control on self-

worth. Initially four-way, three-way, and two-way interactions were tested, but there were no significant interactions between psychological control and ordinal position or sex. Thus, the final model only included control variables and main effects of psychological control. Similar to sibling support, self-worth was the dependent variable which was predicted by the same controls.

There was a marginally significant finding for maternal psychological control such that the more children perceived receiving psychological control from their mothers, the lower their self-worth. There were no significant main effects between psychological control and the dependent variable, self-worth.

Associations of psychological control with body-esteem. Analyses in this section tested the associations between perceptions of receiving psychological control and the dependant variable, body-esteem. The control variables were the same as in sibling support, with the addition of BMI. All four-way interactions were non-significant, therefore the final model was re-run using three-way and lower order interactions.

There was a significant finding for BMI such that the heavier an individual, the lower his body-esteem. Also, there was a significant adolescent (actor) sex finding such that boys reported lower body-esteem than girls. Adolescent and sibling main effects were non-significant, but there was a significant ordinal position, sibling sex, and sibling psychological control interaction such that the more psychological control later-born sisters (partner) reported receiving from earlier-born adolescents (actor), the more body-esteem earlier-born adolescents had (sibling/partner effect; see Figure 4.C).

Associations of psychological control with appearance-related self-worth.

Analyses in this section tested the associations between perceptions of receiving psychological control and the dependant variable, appearance-related self-worth. The control variables were the same as for body-esteem. All interactions were non-significant, therefore the final model was re-run using the controls.

There was a marginally significant finding for maternal psychological control such that the more children perceived receiving psychological control from their mothers, the more dependent they were on their physical appearance to gain self-worth. There was also a significant finding for adolescent (actor) sex such that girls reported receiving sibling psychological control more so than boys. Similar to the associations with psychological control and self-worth, there were no significant main effects or interactions between psychological control and the dependent variable, appearance-related self-worth.

Associations of psychological control with competence in physical appearance.

Analyses in this section tested the associations between perceptions of receiving psychological control and the dependant variable, competence in physical appearance. The control variables were the same as for body-esteem. All four-way interactions were non-significant, thus the final model included only three-way and lower order interactions.

There was a significant finding for BMI such that the heavier an individual, the less competent he was in his physical appearance. There was also a significant sibling (partner) sex finding such that adolescents with brothers showed more competence in their physical appearance than adolescents with sisters. Adolescent and sibling main effects were non-significant, but there was a marginally significant ordinal position,

adolescent sex, and sibling psychological control interaction such that the more later-born siblings reported receiving psychological control from earlier-born adolescent boys, the less confident earlier-born boys were in their physical appearance (sibling/partner effect; see Figure 4.D).

CHAPTER 8

DISCUSSION

The purpose of Study 2 was to clarify the associations between sibling psychological control and siblings' relationship quality (e.g., sibling support) and individuals' internal adjustment (self-worth and body worth/competence). Furthermore, moderations of sibling sex composition and ordinal position were tested. When significant findings were detected, the majority of associations between psychological control and the dependent variables were harmful. These findings suggest that sibling psychological control might mirror parental psychological control in the extent to which this construct is viewed as a destructive dyadic experience (e.g., Barber, 2002).

Sibling Psychological Control and Relational Adjustment

Adolescent girls who reported receiving greater psychological control by a sibling also rated the sibling relationship as lower in supportiveness (see hypothesis 1.A). This result supports the hypotheses that being the recipient of greater control would be associated with lower sibling support and also that females would report a stronger relationship between the associations than males (see hypothesis 1.D). Additionally, adolescents who were higher in psychological control (based on the perceptions of later-born sisters) showed lower sibling support, although adolescents showed higher support

based on perceptions of later-born brothers. The later findings should be interpreted with caution, given that the slopes for these interactions were marginally significant. These findings tentatively and partially support the hypothesis that greater psychological control would be associated with lower support (based on sisters' perceptions), but in some instances support was actually greater with more control (based on brothers' perceptions). The finding that support might actually become higher based on greater control was initially an odd finding, although given that higher support was an outcome of brothers' perceptions of the control, it could be that given males' lower involvement and desire for intimacy (compared to females; e.g., Cole & Kerns, 2001) adolescents who were controlling could relish more in their dominance. That is, if a sibling is less distraught about the aggressive nature of the relationship, then that adolescent might perceive more benefits (i.e., "I perceive more support in the relationship because my sibling often does what I tell him to do and therefore I maintain most of the power") than in a relationship where the other sibling is more concerned by the deterioration of the relationship (as perhaps was the instance for adolescents with younger sisters).

Importantly, the findings for sibling supportiveness were over and above the effects for psychologically controlling mothers, lending support to the idea that when psychological control is experienced by multiple persons within the family, that the outcomes are worse for the individual than if that individual were to receive this control from only one family member. Additionally, when maternal psychological control is present in a family, it is likely influencing the family climate, and increasing the likelihood that siblings will learn these behaviors and engage similarly to their mother (Crick & Grotpeter, 1995; Soenens, & Vansteenkiste, 2010; Noller, Feeney, Peterson, &

Sheehan, 1995). Unfortunately this may mean that when psychological control is present within that family that it is likely these practices are being used by more than one member, making the family climate more hostile and detrimental to youths who experience such control.

Given previous focus on the individual adjustment of sibling and parental psychological control (e.g., Barber, 2002; Conger et al, 1997), associations between control and relational adjustment were previously unknown. Though psychological control has historically been perceived as a dyadic phenomenon, previous research has not tested associations between control and relationship quality based on both partners' perceptions. Therefore, the present study contributes to existing knowledge by reinforcing the detrimental association of psychological control not only to the individual, but to the dyadic relational context as well. The examination of sibling support/relational quality in conjunction with psychological control is further significant given that previous research associates siblings with lower relationship quality/support with a host of other negative outcomes (e.g., greater conflict, internalizing symptoms, fewer social skills, loneliness, and lower life satisfaction; Milevsky, 2005; Morgan, Shaw, & Olin, 2012). Thus, it may be that siblings that engage in greater frequencies of psychological control may experience other negative relational and individual outcomes beyond lower support due to the associations with lower sibling support in general.

Sibling Psychological Control and Individual Adjustment

Sibling psychological control was also associated with individual adjustment. It was hypothesized that greater control would be associated with lower self-worth and body competence/worth (see hypothesis 1.B). Interestingly, there were no associations

between sibling control and self-worth. This was surprising given past parent-child work associating greater psychological control with lower self competence and worth (Barber, 2002; Salafia, Gondoli, Corning, Bucchianeri, & Godinez, 2009), although, the lack of significant findings may be partially attributed to the issue of controlling for maternal psychological control (maternal psychological control was marginally significant). Furthermore, Conger and colleagues (1997) found an association between greater sibling psychological control and depression/lower self-confidence for boys and girls (though the associations were significant only for girls at Time 2). Although Conger et al. (1997) did examine internalizing symptoms; they did not specifically test the association between control and self-worth/esteem. As a result of self-worth being a subjective evaluation of one's value (Crocker & Wolfe, 2001) it could be that individuals simply did not base their worth on the opinions and behaviors of their sibling.

Based on the notion that individuals fluctuate in their perceived worth depending on specific domains of worth (Crocker, Luhtanen, Cooper, & Bouvrette, 2003), those adolescents who base their worth in other areas (e.g., physical appearance, virtue, and/or God's love) and not on gaining approval from others may not experience lower self-worth solely on the behaviors (albeit negative and controlling behaviors) of their siblings. It is also possible that adolescents who place their domains of worth on the approval of others may place more weight on the approval of some compared to others. For instance, adolescents may place more weight on the opinions of their parents than that of siblings (because parental psychological control is associated with decreased self-worth; Salafia et al., 2009). Thus, based on this suggestion, adolescents who experience greater psychological control from parents would experience lower self worth, but would not

experience those same outcomes from a psychologically controlling sibling. This may be due to the greater power differential between parents and children compared to siblings (Dunn, 1993). Given these differences in power/status, children may be more detrimentally affected by someone they perceive as having more control over their lives compared to a person considered more their equal (e.g., a close-in-age sibling).

Sibling psychological control was found to be associated with individuals' body evaluations, specifically for body-esteem and physical competence. Significant findings were focused on the adjustment of the adolescent based on siblings' reports of receiving psychological control from that adolescent (i.e., partner effects). Thus, the more control later-born siblings reported receiving from their earlier-born siblings, the more body-esteem (based on sisters reports of being controlled) and the less confidence in physical appearance (only for adolescent boys who were controlling) earlier-born adolescents had. These findings show that it wasn't the adolescent who reported receiving the control that experienced the outcomes (actor effect), but instead, it was the sibling who reported receiving the control that associated with the outcomes of the adolescent who was psychologically controlling (partner effect). These findings showed partial support for the hypothesis that greater control would be associated with lower body competence, although, greater control was associated with body worth in some circumstances (see hypothesis 1.B). These mixed results were surprising, given that body-esteem and confidence in physical appearance are strongly positively correlated (see Table 2).

The finding that greater control was associated with greater body-worth initially appeared to be an odd finding. Though, considering that this was a partner effect, the results show that the more control individuals have over others (reported from the

perspective of the sibling), the better they feel about themselves (especially their body-worth). Psychologically controlling adolescents with later-born sisters may have had greater body-esteem because of the greater sense of control or power they perceived within the relationship (being the one that was controlling verses being the one controlled). Indeed, previous research has shown that individuals who can maintain more power in a relationship will experience greater self-esteem in general due to their greater ability to control and influence others. Thus, those individuals who generally feel entitled to control others should have a higher view of themselves (Wojciszke & Struzynska-Kujalowicz, 2007). Though this work examined general self-worth, if one's perception of one's body is an important indicator of self-worth, greater control could be applicable to any form of one's worth (including one's body-esteem). Additionally, this finding supports the idea that siblings (particularly earlier-born siblings) may wish to enact psychologically controlling behaviors in order to preserve their own status and dominance in the relationship (similar to psychologically controlling parents; Soenens & Vansteenkiste, 2010).

The other body evaluation finding, that psychologically controlling boys experienced less competence in physical appearance when later-born siblings reported being psychologically controlled by these boys, appears to be contrary to the previous finding, although it was hypothesized that greater control would be associated with more negative body evaluations (see hypotheses 1.B and 1.D). Interestingly, the current study hypothesized that the link to outcomes would be stronger for the adolescent perceiving the control rather than the one who was psychologically controlling. Within the peer literature, peers that maintain higher levels of aggression also experience lower social

competency (e.g., loneliness, popularity, mutual friendships, and social acceptability; Schoffstall & Cohen, 2011). Though aggression is not the same as psychological control, it still maintains facets of relational negativity as psychological control does (e.g., control and invalidating another's personhood). Thus, it could be that individuals who use more controlling methods have lower competency in a variety of areas (including lower competency in one's physical appearance).

The most surprising findings were the lack of actor effects for individual outcomes of psychological control. It was assumed, based on previous research (e.g., Barber, 2002; Conger et al., 1997) that the individual who perceived being psychologically controlled would experience more negative individual outcomes than the person who was controlling. Though this was confirmed for sibling support, it was not confirmed for the individual outcomes. It is tempting to infer, based on these lack of findings within the individual outcome analyses, that psychological control is not damaging to the recipient. It is possible, however, that the adjustment measures used in the present study did not adequately capture the individual effects that siblings' most likely experienced when they perceived greater psychological control. First, the measures used in the present study were specific to internalizing outcomes (e.g., self-worth and body evaluations), but did not include internalizing symptoms that have previously been associated with sibling psychological control (depression; Conger et al., 1997), and thus internalizing symptoms may have been replicated had we used a measure of depression in addition to self-worth. Additionally, the inclusion of externalizing symptoms may have produced significant outcomes for boys in particular based on previous research (Barber, 2002; Conger et al., 1997). Thus, though previous work

within the parent-child relationship has shown that greater parental psychological control was associated with lower self-worth (Barber, 1996), the present study did not support the association between greater control and more internalizing problems.

Second, the measures for the present study were based on general perceptions of one's worth (assessed globally and based on body evaluations). It is possible that adolescents' based more of their self worth on the opinions of their parents, peers, and self compared to the opinions of their sibling. Thus, though siblings may have experienced less self-worth with greater sibling psychological control (though not significant in the present study), the effects might have been stronger had maternal psychological control not been controlled for in the analyses. That is, adolescents may experience the most severe adjustment when experiencing psychological control from a parent (considering that in a loving and safe parent-child relationship, children should be able to trust and depend on their parents), but experience less maladjustment (or fewer forms of internalizing symptoms) with siblings than they would with parents.

Perceivably, adolescents that are experiencing psychological control from a parent *and* a sibling should experience worse outcomes than if adolescents are experiencing these behaviors from only one family member. The correlational analyses for the present study along with previous research (Crick & Grotpeter, 1995; Soenens, & Vansteenkiste, 2010; Noller, Feeney, Peterson, & Sheehan, 1995) suggest that when an adolescent perceives control from one family member he/she is likely to perceive control from an additional family member as well given that children often pick up on the controlling techniques of their parents and then are more likely to use these controlling methods themselves. Thus, given the extensive research on the negative associations

psychological control has for recipients of such control (e.g., Doyle & Markiewicz, 2005; Loukas, 2009; Manzeske & Stright, 2009; Maysless & Scharf, 2009; Wang & Pomerantz, 2007), it is likely that the present study's limited investigation of individual outcomes was not broad enough. Future research should investigate a broader array of outcomes, both internally and externally, to better understand how sibling psychological control might be associated with the individual perceiving such control.

Appearance-related self-worth was not significantly related to psychological control within the interactions, although the correlational analyses did show that maternal psychological control was associated with later-born siblings' tendency to base their self-worth on appearance. This finding supports the previously outlined notion that, in some instances, adolescents may experience more deleterious outcomes from a person they perceive as having more control/power over them, such as a parent than of a close-in-age sibling (Dunn, 1993).

There were some significant ordinal position and sibling sex composition moderations. For both significant ordinal position moderations (and the marginally significant findings for support), the hypothesis that later-born siblings would report a stronger relationship between psychological control and the outcomes was partially confirmed (see hypothesis 1.C). Though later-borns were the ones who reported being psychologically controlled, it was the adjustment of the earlier-borns that was significant. Although, this is in line with previous findings that report older siblings often control younger siblings more so than the reverse (e.g., Tucker & Udegraph, 2010). The sibling sex composition moderations were slightly more complex. As with the ordinal position moderations, significant moderations for sex were found with support and the body

evaluation measures (see hypothesis 1.D). Adolescent girls and adolescents with later-born brothers and sisters (for support) along with earlier-born adolescent boys with later-born siblings and earlier-born adolescents with later-born sisters (for the body measures) had a stronger relation between psychological control and support/body evaluations. The hypothesis that sister-sister dyads might be most likely to have a stronger relation between the constructs was not supported. Because significant results only revealed sex differences with one sibling in the dyad, it is possible that these dyads could be same-sex, mixed-sex, or both. Thus, it is still unclear which sex compositions have the strongest relationship between control and the outcome variables. Although, given that this is the first attempt at trying to understand sibling sex composition within a psychological control framework, the findings do warrant some attention. It appears that adolescent girls and later-born boys and girls might be particularly sensitive to receiving psychological control whereas adolescent girls and earlier-born boys might be particularly sensitive to the effects of psychological control (either by being controlled as in the case with adolescent girls or controlling as in the case with earlier-born boys). The mean differences also suggest that later-born siblings (both boys and girls) might be particularly at risk for receiving psychological control from an older sister.

Conclusions

In sum, later-born siblings are more likely to report receiving psychological control than earlier-born siblings though both boys and girls report receiving control and being the ones who were controlling. Additionally, adolescent girls who reported receiving more control from siblings rated the sibling relationship as lower in support, although it appears that when psychological control is associated with consequences

(negative or positive) for individual adjustment, that it is more likely for the administrator of this control to experience individual outcomes than for the recipient. Even though in the current study psychological control was not associated with self-evaluations for the recipient (global and body-related), psychological control could be related to other internal adjustment outcomes such as anxiety and unhealthy/or lack of attachment to siblings. Thus, the role that psychological control plays on the recipient of such control deserves further and more in-depth investigation. In general though, the presence of sibling psychological control is primarily associated with harmful outcomes. Thus, with the exception of greater control being associated with greater body-worth for the administrator of the control, sibling psychological control appeared to be negatively associated with the relationship and the individual.

Clearly, this study begins a foundation for clarifying the existence of psychological control within the sibling relationship and its associations with relational and individual outcomes. Given the extensive work with parental psychological control, this study supports the notion that examining other dyadic relationships within the family (i.e., siblings) is also a worthy pursuit. Undoubtedly this work should be expanded to examine other sibling relational and individual outcomes. For instance, the present study examined a positive relationship feature (i.e., support), but there are other positive relationship features such as trust, dependability, and closeness that might be associated with psychological control.

Additionally, it would be important to investigate whether psychological control not only associated with fewer positive relationship qualities, but also whether this control is associated with greater negative relationship qualities. Given that individuals

who report greater sibling control report more contention in those relationships (Tucker & Updegraff, 2010), investigating the connection between psychological control and lower relationship quality seems viable.

Furthermore, the individual adjustment outcomes examined in the present study focused on internal adjustment. It would be interesting to further investigate external adjustment such as behavioral problems, school achievement, and social competency. It could be that siblings that perceive more control from a sibling will show worse performance in other areas of life. Overall, the study of sibling psychological control deserves more attention from future research to allow greater understanding of the dynamics of adolescent sibling relationships and for the adjustment of individuals.

CHAPTER 9

GENERAL DISCUSSION

When examining the adolescent sibling relationship, it is clear that this relationship in particular highlights the quintessential “love-hate” relationship (McHale, Kim, & Whiteman, 2006) with the presence of both positive and negative attributes. As seen in the present studies, siblings can be both a source of support (with disclosure) and also a source of contention (with psychological control). These varying relational characteristics have been shown to be associated with both the health of the relationship and also the well-being of each individual.

The present studies contribute to our knowledge of sibling relationships in several ways. First, though past research has examined sibling disclosure and psychological control (e.g., Howe et al., 2000; Conger et al., 1997), the present studies extend this work by examining these mechanisms by which sibling relationships develop and influence adjustment in more detail. Study 1 confirms that not only do siblings disclose about feelings, but they also disclose about a variety of general (e.g., family, friends, and school) and body-related issues. Study 2 confirms that siblings not only use control and manipulation to command their siblings, but that they also engage in psychological control similarly to how parents engage in this type of control. Furthermore, both studies

represent the perspectives of both siblings within the dyad, a novel approach to sibling research. Though subjective reports from one sibling are helpful for understanding the sibling relationship, a more comprehensive understanding of this relationship is gained by examining both siblings within the dyad. Indeed, in several instances, it was apparent that the behaviors of one sibling influenced the outcomes of the other sibling. Thus, these studies provide a preliminary basis for understanding some of the mechanisms through which siblings engage, change the dynamics within the sibling relationship, and influence the adjustment of both siblings.

These studies were not without limitations. The sample was ethnically homogeneous and affluent, restricting the generalizability of the present studies. Future work should focus on extending the present results to a more ethnically and economically diverse population. For instance, previous research has shown that socio-economic status relates to the degree to which psychological control is present in a relationship (e.g., lower SES mothers utilized more control with young children than higher SES mothers; El-Sheikh, Hinnant, Kelly, & Erath, 2010). Thus, further investigation of a more diverse population could help explain variations in psychological control, and perhaps disclosure, within the family context.

The present research initiates a foundation for studying the mechanisms through which siblings engage and influence one another. Though two very important sibling behaviors were investigated in the current work, there are many other behaviors that could be examined such as the ways in which siblings engage in varying forms of aggression (e.g., relational aggression), enmeshment, and camaraderie. Based on the current studies, it is apparent that both positive and negative sibling

behaviors/experiences need to be examined. In line with the examination of different sibling behaviors, the examination of sibling outcomes should also be expanded. The present studies investigated one aspect of relationship quality (sibling support), but there are several other aspects that contribute to a positive relationship (e.g., warmth, trust, and mutuality). Negative relationship qualities should also be examined. Given that disclosure tended to promote positive sibling relationship quality and psychological control tended to diminish relationship quality, it is possible that the reverse is also true—that psychological control might promote negative sibling relationship quality whereas disclosure might help diminish negative relationship qualities. Furthermore, the present studies focused on internalizing outcomes. Future work should also examine externalizing outcomes such as problem behaviors, delinquency, and social competency given past work on siblings' use of delinquency training, particularly with male dyads (Criss & Shaw, 2005). Finally, these studies examined the associations of sibling behaviors to sibling outcomes. It is possible that there are also relationships between sibling adjustment to sibling behaviors. For instance, siblings who report more supportiveness in their relationships are probably more likely to engage in more disclosure and less psychological control.

Overall, the present studies contribute to a more comprehensive framework for understanding the dynamics by which siblings function. The focus on sibling relationships research has implications for future family research. Within the sibling literature, it is a common practice to control for the parent-child relationship while examining the sibling relationship with the understanding that the sibling relationship, to a degree, exists within and is influenced by the parent-child context. Likewise, it would

be interesting to reverse this notion and begin to examine whether the parent-child relationship is also influenced by the sibling relationship as well. Previous work has shown that differing sibling dynamics (e.g., sibling cohesion, sibling sex composition, and geographical closeness) do impact the parent-child relationship (van Gaalen, Dykstra, & Flap, 2008). This work suggests that examining how the sibling dyad influences other dyadic relationships might be important. Thus, in the future, it might be important for researchers to not only assume that the parent-child relationship influences the sibling relationship (and therefore control for this in sibling research), but to also assume that the sibling relationship influences the parent-child relationship (and to control for this in parent-child research). Though there is much to do, the present work underscores the importance of the sibling relationship and examining the mechanisms through which this dyadic structure functions and develops.

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Table 1

Correlations, Means, and SD among Earlier- and Later-born Siblings' Disclosure, Sex, Age, BMI, and Outcome Variables

	Earlier Born <i>M(SD)</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Later Born <i>M(SD)</i>
1. Sex	1.52(.50)	-	.13	.03	.11	.15	.10	.12	.08	.14	.10	.02	.45**	-.16	-.19	1.54(.50)
2. Age	16.46(1.35)	-.03	-	.17	-.22*	.03	-.05	.07	-.05	.03	-.09	.02	.20*	.04	-.03	13.67(1.56)
3. BMI	2.14(.50)	.00	.07	-	-.13	.05	-.05	.02	-.07	.04	-.19	-.06	.12	-.23*	-.19	1.80(.65)
4. DisclosureG_M	2.88(.83)	.13	.01	-.17	-	.60**	.68**	.48**	.67**	.47**	.33**	.20	-.10	.15	.20*	3.13(.87)
5. DisclosureG_S	2.59(.85)	.17	.16	-.12	.59**	-	.50**	.74**	.43**	.71**	.27**	.52**	-.05	.18	.04	2.78(.99)
6. DisclosureBpos_M	2.33(.99)	.16	-.03	-.25*	.56**	.66**	-	.71**	.77**	.63**	.26**	.27**	-.01	.31**	.20*	2.48(1.05)
7. DisclosureBpos_S	2.10(.96)	.09	.09	-.14	.44**	.76**	.88**	-	.57**	.84**	.19	.34**	.02	.22*	.10	2.15(.98)
8. DisclosureBneg_M	2.45(1.02)	.16	.02	-.16	.65**	.51**	.78**	.66**	-	.73**	.21*	.23*	-.05	.19	.21*	2.58(1.18)
9. DisclosureBneg_S	2.14(.96)	.09	.08	-.14	.44**	.70**	.77**	.84**	.82**	-	.16	.48**	-.04	.26**	.15	2.24(1.12)
10. Self-Worth	3.00(.43)	-.07	.15	-.08	.27**	.26**	.29**	.26**	.19	.18	-	.27**	-.10	.41**	.71**	3.00(.42)
11. Sibling Support	3.00(.78)	.06	.10	-.15	.43**	.64**	.43**	.49**	.44**	.47**	.17	-	-.13	.42**	.19	3.04(.84)
12. Appearance-Worth	4.57(1.08)	.38**	-.00	.12	.02	.13	.08	.12	.06	.05	-.11	.02	-	-.36**	-.32**	4.19(1.14)
13. Body-Esteem	2.80(.46)	-.22*	.08	-.26*	.22*	.15	.21*	.17	.22*	.14	.49**	.22*	-.45**	-	.58**	2.86(.44)
14. Competence-Phys.	2.74(.85)	-.13	.07	-.20	.12	.13	.29**	.18	.12	.21*	.67**	.05	-.34**	.40*	-	2.84(.77)

Note. * $p < .05$, ** $p < .01$. Earlier-born siblings are on the bottom diagonal and later-born siblings are on the top diagonal. BMI = Body Mass Index. DisclosureG_M/S = Individual's reports of general disclosure to mother/sibling. DisclosureBpos_M/S = Individual's reports of disclosure of positive body comments to mother/sibling. DisclosureBneg_M/S = Individual's reports of disclosure of negative body comments to mother/sibling. Appearance-Worth = Individual's extent to which self-worth is based on appearance, Contingencies of Self-Worth. Competence-Phys. = Competence in one's physical appearance, Harter Physical Appearance Subscale.

Table 2

Correlations, Means, and SD among Earlier- and Later-born Siblings' Psychological Control, Sex, Age, BMI, and Outcome Variables

	Earlier Born <i>M(SD)</i>	1	2	3	4	5	6	7	8	9	10	Later Born <i>M(SD)</i>
1. Sex	1.52(.50)	-	.13	.03	.02	.01	.10	.02	.45**	-.16	-.19	1.54(.50)
2. Age	16.46(1.35)	-.03	-	.18	.24*	.08	-.09	.02	.20*	.08	-.03	13.67(1.56)
3. BMI	2.14(.50)	.00	.07	-	.17	.11	-.19	-.06	.12	-.23	-.19	1.80(.65)
4. PsychControl_M	1.69(.42)	.08	-.05	.11	-	.60**	-.19	-.20*	.25*	-.12	-.15	1.61(.36)
5. PsychControl_S	1.62(.36)	-.08	-.26*	-.11	.51**	-	-.18	-.34**	.09	-.16	-.16	1.70(.37)
6. Self-Worth	3.00(.43)	-.08	.15	-.08	-.18	-.13	-	.27**	-.10	.41**	.71**	3.00(.42)
7. Sibling Support	3.00(.78)	.06	.10	-.15	-.29**	-.23*	.17	-	-.13	.42**	.19	3.04(.84)
8. Appearance-Worth	4.57(1.08)	.38**	-.00	.12	.14	-.04	-.11	.02	-	-.36**	-.32**	4.19(1.14)
9. Body-Esteem	2.80(.46)	-.17	.08	-.32**	-.15	-.09	.54**	.24*	-.43**	-	.58**	2.86(.44)
10. Competence-Phys.	2.74(.85)	-.13	.07	-.20	-.05	-.06	.67**	.05	-.34**	.68**	-	2.84(.77)

Note. * $p < .05$, ** $p < .01$. Earlier-born siblings are on the bottom diagonal and later-born siblings are on the top diagonal. BMI = Body Mass Index. PsychControl_M/S = Individual's reports of mother's/sibling's psychological control. Appearance-Worth = Individual's extent to which self-worth is based on appearance, Contingencies of Self-Worth. Competence-Phys. = Competence in one's physical appearance, Harter Physical Appearance Subscale.

Table 3

Means (SD) for Earlier- and Later-born Siblings' Disclosure and Psychological Control Based on Sex and Ordinal Position

	Later-Born	Earlier-Born		Later-Born	Earlier-Born
General Disclosure			Positive Body Disclosure		
Total	2.77 (.99)	2.59 (.85)	Total	2.14 (.99)	2.09 (.96)
Female Adolescent	2.91 (.94)	2.73 (.93)	Female Adolescent	2.26 (.92)	2.19 (1.02)
With Sister	3.10 (.96)	2.75 (.97)	With Sister	2.41 (1.00)	2.39 (1.10)
With Brother	2.63 (.84)	2.40 (.72)	With Brother	2.01 (.76)	1.99 (.97)
Male Adolescent	2.61 (1.04)	2.44 (.74)	Male Adolescent	2.03 (1.05)	2.01 (.89)
With Sister	2.71 (.99)	2.70 (.90)	With Sister	2.00 (.89)	1.87 (.83)
With Brother	2.53 (1.09)	2.47 (.77)	With Brother	2.04 (1.18)	1.99 (.83)
Negative Body Disclosure			Psychological Control		
Total	2.10 (1.24)	2.03 (.94)	Total	1.70 (.37)	1.62 (.36)
Female Adolescent	2.37 (1.12)	2.22 (1.02)	Female Adolescent	1.70 (.41)	1.59 (.37)
With Sister	2.64 (1.24)	2.47 (1.09)	With Sister	1.79 (.43)	1.65 (.39)
With Brother	1.91 (.71)	2.03 (.92)	With Brother	1.60 (.32)	1.57 (.34)
Male Adolescent	2.07 (1.11)	2.05 (.91)	Male Adolescent	1.69 (.33)	1.65 (.34)
With Sister	1.74 (.65)	1.74 (.65)	With Sister	1.77 (.33)	1.66 (.35)
With Brother	2.03 (.94)	2.03 (.94)	With Brother	1.63 (.31)	1.49 (.33)

Table 4

Standardized Parameter Estimates for General Disclosure to Sibling Support, Self-Worth, Body-Esteem, Appearance-Related Self-Worth, and Competence in Physical Appearance

	Sibling Support		Self-Worth		Body-Esteem		Appearance-Worth		Competence	
	Estimate	t-value	Estimate	t-value	Estimate	t-value	Estimate	t-value	Estimate	t-value
Intercept	.00	.06	-.04	-.58	.02	.28	.04	.60	-.07	-.84
Body Mass Index	-	-	-	-	-.22	-3.14**	.11	1.58	-.16	-2.02*
Disclosure to Mother	.01	.19	.16	1.71 ⁺	.07	.82	-.03	-.31	.05	.48
Ordinal Position	-.05	-.68	-.01	-.15	-.09	-.87	.02	.21	-.12	-1.08
Sex_Adolescent	-.06	-1.09	-.04	-.53	-.25	-3.39**	.42	6.06***	-.17	-2.23*
Sex_Sibling	-.03	-.44	-.11	-1.56	-.09	-1.16	.04	.60	-.16	-2.13*
Age	.06	.67	.04	.36	.13	1.37	.08	.72	.10	.88
Disclosure_Adolescent	.55	7.20***	.18	1.91	.18	1.88 ⁺	-.07	-.76	.12	1.28
Disclosure_Sibling	.13	2.29*	-.07	-.90	-.07	-.90	.24	3.13**	-.22	-2.59*
Sex_A X Sex_S	-.03	-.38	-.01	-.14	-.09	-1.29	-.09	-1.22	.07	.92
Birth order X Sex_A	.01	.11	-.06	-.86	-.03	-.40	-.11	-1.49	.06	.79
Ordinal Position X Sex_S	.03	.46	.10	1.39	.09	1.25	.05	.67	.03	.42
Ordinal Position X Sex_A X Sex_S	.03	.61	.15	2.29*	.11	1.37	-.12	-1.76	.15	2.01*

Ordinal Position X Disclosure_A	-	-	-.03	-.42	-	-	.09	1.10	-.01	-.06
Ordinal Position X Disclosure_S	-	-	-.01	-.17	-	-	-.06	-.77	.03	.33
Sex_A X Disclosure_A	-	-	.16	2.06*	-	-	-.10	-1.33	.15	1.81 ⁺
Sex_A X Disclosure_S	-	-	.02	.22	-	-	.07	.92	.03	.40
Sex_S X Disclosure_A	-	-	.01	.17	-	-	.03	.42	-.06	-.66
Sex_S X Disclosure_S	-	-	-.04	-.55	-	-	-.05	-.66	-.03	-.42
Ordinal Position X Sex_A X Disclosure_A	-	-	.06	.76	-	-	.01	.10	.15	1.73 ⁺
Ordinal Position X Sex_A X Disclosure_S	-	-	.04	.45	-	-	-.01	-.11	.05	.53
Ordinal Position X Sex_S X Disclosure_A	-	-	-.07	-.83	-	-	.10	1.29	-.14	-1.63
Ordinal Position X Sex_S X Disclosure_S	-	-	-.02	-.33	-	-	.03	.39	.00	.01
Sex_A X Sex_S X Disclosure_A	-	-	-.04	-.59	-	-	-.01	-.15	.01	.08
Sex_A X Sex_S X Disclosure_S	-	-	.22	2.89**	-	-	-.02	-.27	.21	2.55*
Ordinal Position X Sex_A X Sex_S X Disclosure_A	-	-	-	-	-	-	.15	1.83 ⁺	-	-
Ordinal Position X Sex_A X Sex_S X Disclosure_S	-	-	-	-	-	-	.05	.67	-	-

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. A = Adolescent. S = Sibling. Disclosure A/S = Disclosure of adolescent/sibling.

Table 5

Standardized Parameter Estimates for Positive Body-Related Disclosure to Sibling Support, Self-Worth, Body-Esteem, Appearance-Related Self-Worth, and Competence in Physical Appearance

	Sibling Support		Self-Worth		Body-Esteem		Appearance-Worth		Competence	
	Estimate	t-value	Estimate	t-value	Estimate	t-value	Estimate	t-value	Estimate	t-value
Intercept	.03	.36	-.02	-.21	.05	.81	-.01	-.20	-.01	-.19
Body Mass Index	-.00	-.03	-.10	-1.41	-.22	-3.13**	.09	1.22	-.15	-2.00*
Disclosure to Mother	-.04	-.31	.22	1.74 ⁺	.23	1.98*	-.15	-1.19	.28	2.20*
Ordinal Position	-.13	-1.45	.00	.01	-.13	-1.26	.08	.80	-.14	-1.34
Sex_Adolescent	-.02	-.32	-.01	-.09	-.23	-3.28**	.39	5.57***	-.18	-2.48*
Sex_Sibling	.00	.06	-.16	-2.21*	-.10	-1.36	.05	.64	-.16	-2.18*
Age	.08	.72	.03	.29	.16	1.74 ⁺	.07	.67	.13	1.20
Disclosure_A	.45	3.59**	.12	.90	.06	.50	.08	.60	-.04	-.33
Disclosure_S	.14	1.82 ⁺	-.10	-1.11	-.08	-1.05	.20	2.33*	-.04	-.49
Sex_A X Sex_S	-.07	-.80	-.01	-.13	-.09	-1.34	-.07	-.97	.05	.58
Birth order X Sex_A	.03	.35	-.06	-.86	.00	.06	-.07	-1.07	.01	.19
Ordinal Position X Sex_S	-.07	-.91	.07	.95	.03	.32	.11	1.56	-.01	-.16
Ordinal Position X Sex_A X Sex_S	.06	1.12	.09	1.36	.10	1.32	-.09	-1.31	.12	1.69 ⁺

Ordinal Position X Disclosure_A	.11	1.38	-.02	-.20	-.00	-.05	-.04	-.49	.00	.03
Ordinal Position X Disclosure_S	-.08	-1.00	-.03	-.41	-.19	-2.53*	.12	1.38	-.01	-.14
Sex_A X Disclosure_A	.11	1.25	.30	3.60**	.29	3.66**	-.21	-2.35*	.24	2.83**
Sex_A X Disclosure_S	-.10	-1.05	-.02	-.21	-.16	-1.93 ⁺	.09	.97	-.05	-.52
Sex_S X Disclosure_A	-.02	-.28	-.02	-.20	-.14	-1.81 ⁺	.17	1.86 ⁺	-.11	-1.33
Sex_S X Disclosure_S	.06	.72	.03	.41	.07	.87	-.15	-1.62	.08	1.00
Ordinal Position X Sex_A X Disclosure_A	-.17	-2.09*	-.01	-.06	-	-	.03	.28	-	-
Ordinal Position X Sex_A X Disclosure_S	.17	2.10*	.02	.28	-	-	-.08	-.91	-	-
Ordinal Position X Sex_S X Disclosure_A	-.08	-1.00	-.10	-1.05	-	-	.07	.85	-	-
Ordinal Position X Sex_S X Disclosure_S	.09	1.11	.04	.46	-	-	.04	.46	-	-
Sex_A X Sex_S X Disclosure_A	.09	1.21	-.08	-.90	-	-	-.01	-.13	-	-
Sex_A X Sex_S X Disclosure_S	.00	.03	.24	2.82*	-	-	.03	.38	-	-
Ordinal Position X Sex_A X Sex_S X Disclosure_A	-	-	-	-	-	-	.16	1.69 ⁺	-	-
Ordinal Position X Sex_A X Sex_S X Disclosure_S	-	-	-	-	-	-	-.07	-.82	-	-

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. A = Adolescent. S = Sibling. Disclosure A/S = Disclosure of adolescent/sibling.

Table 6

Standardized Parameter Estimates for Negative Body-Related Disclosure to Sibling Support, Self-Worth, Body-Esteem, Appearance-Related Self-Worth, and Competence in Physical Appearance

	Sibling Support		Self-Worth		Body-Esteem		Appearance-Worth		Competence	
	Estimate	t-value	Estimate	t-value	Estimate	t-value	Estimate	t-value	Estimate	t-value
Intercept	-.01	-.12	.01	.16	.04	.52	.02	.31	-.01	-.16
Body Mass Index	-.05	-.83	-.12	-1.61	-.24	-3.31**	.10	1.37	-.16	-2.13*
Disclosure to Mother	-.12	-1.10	.11	1.00	-.06	-.49	.00	.04	-.00	-.03
Ordinal Position	-.02	-.25	.06	.58	-.03	-.22	.08	.85	-.08	-.74
Sex_Adolescent	.03	.47	.03	.46	-.12	-1.33	.36	5.21***	-.13	-1.60
Sex_Sibling	-.07	-.96	-.19	-2.45*	-.22	-2.51*	.07	.98	-.24	-3.00**
Age	.06	.61	-.04	-.35	.10	.94	.10	1.01	.06	.56
Disclosure_A	.58	5.03**	.10	.83	.38	2.82*	-.07	-.62	.22	1.76 ⁺
Disclosure_S	-.01	-.18	-.01	-.17	-.17	-1.84 ⁺	.17	2.37*	-.03	-.44
Sex_A X Sex_S	-.07	-.73	-.08	-.92	-.12	-1.48	-.08	-1.11	-.00	-.03
Birth order X Sex_A	-.04	-.46	-.05	-.72	.03	.41	-.03	-.49	.04	.58
Ordinal Position X Sex_S	-.03	-.38	.07	.95	.05	.59	.06	.83	.02	.26
Ordinal Position X Sex_A X Sex_S	.01	.18	.12	1.84 ⁺	.06	.72	-.08	-1.17	.14	1.80 ⁺

Ordinal Position X Disclosure_A	.04	.58	-.00	-.04	-.05	-.67	-	-	.03	.43
Ordinal Position X Disclosure_S	.04	.52	-.03	-.33	-.10	-1.29	-	-	-.05	-.59
Sex_A X Disclosure_A	.13	1.42	.42	5.09**	.22	2.40*	-	-	.27	3.11**
Sex_A X Disclosure_S	-.02	-.18	-.00	-.04	.10	.97	-	-	.05	.56
Sex_S X Disclosure_A	-.05	-.53	-.16	-1.86 ⁺	-.10	-1.07	-	-	-.13	-1.47
Sex_S X Disclosure_S	.01	.16	.05	.63	-.11	-1.23	-	-	.00	.00
Ordinal Position X Sex_A X Disclosure_A	-.03	-.35	-	-	.15	1.62	-	-	-	-
Ordinal Position X Sex_A X Disclosure_S	.00	.05	-	-	-.03	-.37	-	-	-	-
Ordinal Position X Sex_S X Disclosure_A	-.06	-.74	-	-	-.11	-1.18	-	-	-	-
Ordinal Position X Sex_S X Disclosure_S	.17	2.18*	-	-	-.00	-.05	-	-	-	-
Sex_A X Sex_S X Disclosure_A	.02	.20	-	-	-.21	-2.24*	-	-	-	-
Sex_A X Sex_S X Disclosure_S	.14	1.74 ⁺	-	-	-.10	1.01	-	-	-	-
Ordinal Position X Sex_A X Sex_S X Disclosure_A	-	-	-	-	-	-	-	-	-	-
Ordinal Position X Sex_A X Sex_S X Disclosure_S	-	-	-	-	-	-	-	-	-	-

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. A = Adolescent. S = Sibling. Disclosure A/S = Disclosure of adolescent/sibling.

Table 7

Standardized Parameter Estimates for Psychological Control to Sibling Support, Self-Worth, Body-Esteem, Appearance-Related Self-Worth, and Competence in Physical Appearance

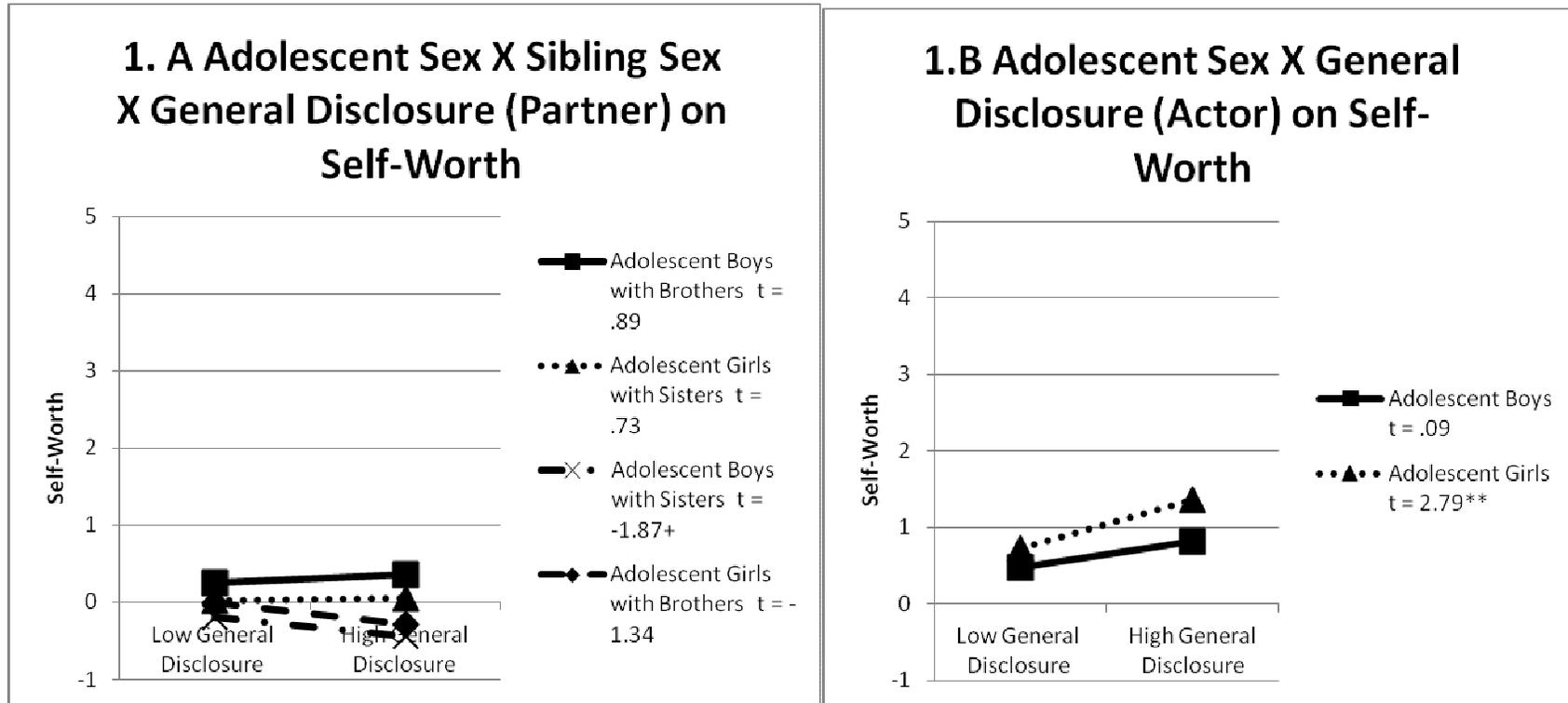
	Sibling Support		Self-Worth		Body-Esteem		Appearance-Worth		Competence	
	Estimate	t-value	Estimate	t-value	Estimate	t-value	Estimate	t-value	Estimate	t-value
Intercept	-.02	-.23	.00	.01	-.03	-.35	.00	.06	-.07	-.80
Body Mass Index	-	-	-	-	-.27	-3.51***	.07	1.03	-.17	-2.13*
Psychological Control from Mother	-.19	-2.34*	-.15	-1.70 ⁺	-.05	-.59	.19	2.32*	.01	.13
Ordinal Position	-.12	-1.28	-.05	-.54	-.04	-.33	.06	.60	-.11	-.92
Sex_Adolescent	.04	.53	.02	.25	-.25	-2.87**	.42	6.03***	-.11	-1.31
Sex_Sibling	.08	1.10	-.08	-1.10	-.07	-.86	.07	1.00	-.17	-1.94*
Age	.15	1.33	.05	.47	.08	.73	.11	1.16	.04	.37
PsychControl _A	-.16	-1.89 ⁺	-.07	-.73	-.09	-.87	-.03	-.30	-.06	-.55
PsychControl _S	-.07	-1.01	.04	.46	.01	.12	-.10	-1.21	-.13	-1.35
Sex_A X Sex_S	.06	.65	-.02	-.31	-.10	-1.29	-.06	-.87	.09	.99
Birth order X Sex_A	.02	.24	-.09	-1.25	-.07	-.95	-.03	-.42	.06	.70
Ordinal Position X Sex_S	-.02	-.29	.07	1.03	.09	1.09	.08	1.18	.02	.23
Ordinal Position X Sex_A X Sex_S	-.00	-.02	.14	2.15*	.04	.42	-.09	-1.45	.14	1.71 ⁺

Ordinal Position X PsychControl _A	.11	1.18	-	-	-.02	-.21	-	-	.04	.38
Ordinal Position X PsychControl _S	-.06	-.61	-	-	.08	.92	-	-	-.11	-1.15
Sex_A X PsychControl _A	-.18	-2.05*	-	-	-.06	-.66	-	-	-.03	-.33
Sex_A X PsychControl _S	.00	.04	-	-	.04	.38	-	-	.09	.83
Sex_S X PsychControl _A	.08	.93	-	-	.11	1.20	-	-	.03	.33
Sex_S X PsychControl _S	-.10	-1.05	-	-	.06	.63	-	-	-.06	-.60
Ordinal Position X Sex_A X PsychControl _A	-.08	-.96	-	-	-.01	-.07	-	-	.03	.34
Ordinal Position X Sex_A X PsychControl _S	-.11	-1.34	-	-	-.08	-.80	-	-	.17	1.73 ⁺
Ordinal Position X Sex_S X PsychControl _A	.03	.38	-	-	-.03	-.30	-	-	-.06	-.61
Ordinal Position X Sex_S X PsychControl _S	.18	2.14*	-	-	.25	2.49*	-	-	.03	.30
Sex_A X Sex_S X PsychControl _A	.08	1.13	-	-	.03	.27	-	-	-.02	-.25
Sex_A X Sex_S X PsychControl _S	-.03	-.45	-	-	-.03	-.25	-	-	.14	1.41
Ordinal Position X Sex_A X Sex_S X PsychControl _A	-	-	-	-	-	-	-	-	-	-
Ordinal Position X Sex_A X Sex_S X PsychControl _S	-	-	-	-	-	-	-	-	-	-

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. A = Adolescent. S = Sibling. PsychControl A/S = Psychological control of adolescent/sibling.

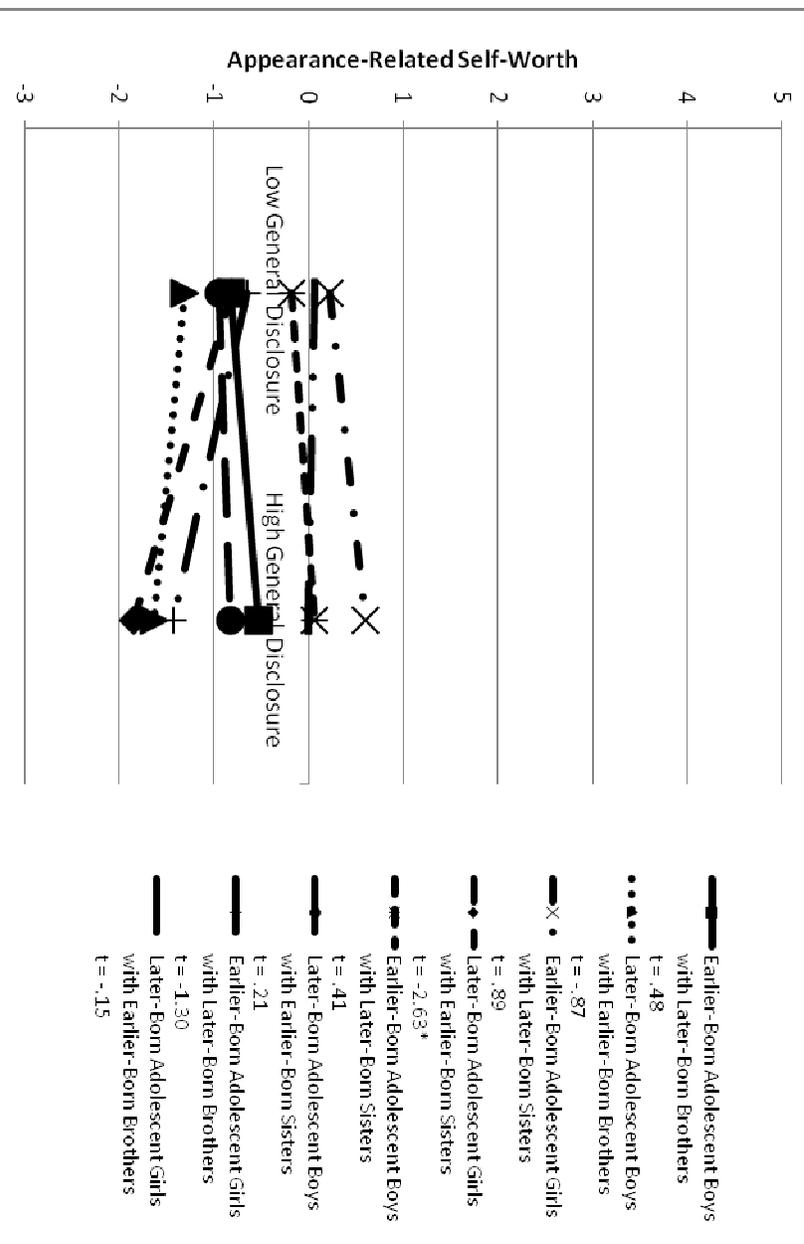
Figures 1.A – 1.E

Associations between General Disclosure, Self-Worth, Appearance-Related Self-Worth, and Competence in Physical Appearance



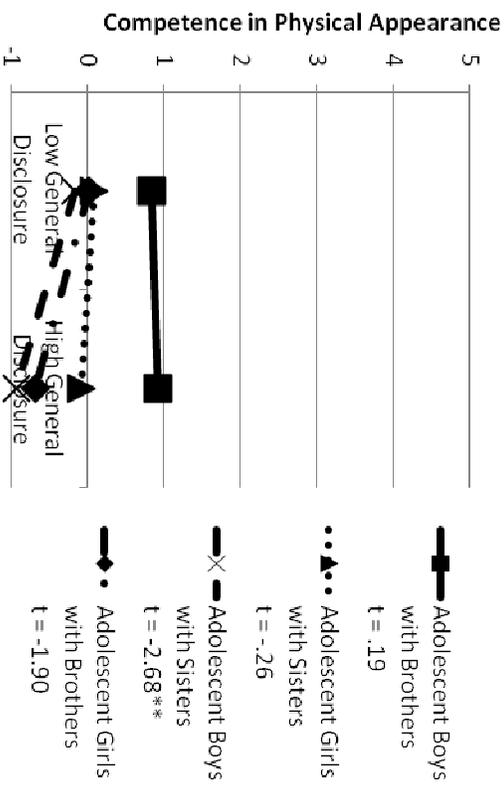
Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

1.C Adolescent Sex X Sibling Sex X Ordinal Position X General Disclosure (Actor) on Appearance-Related Self-Worth

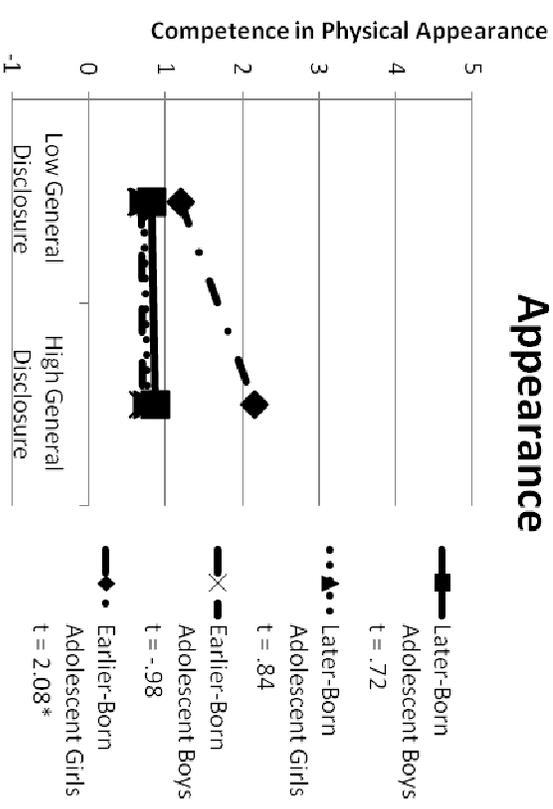


Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

1.D Adolescent Sex X Sibling Sex X General Disclosure (Partner) on Competence in Physical Appearance



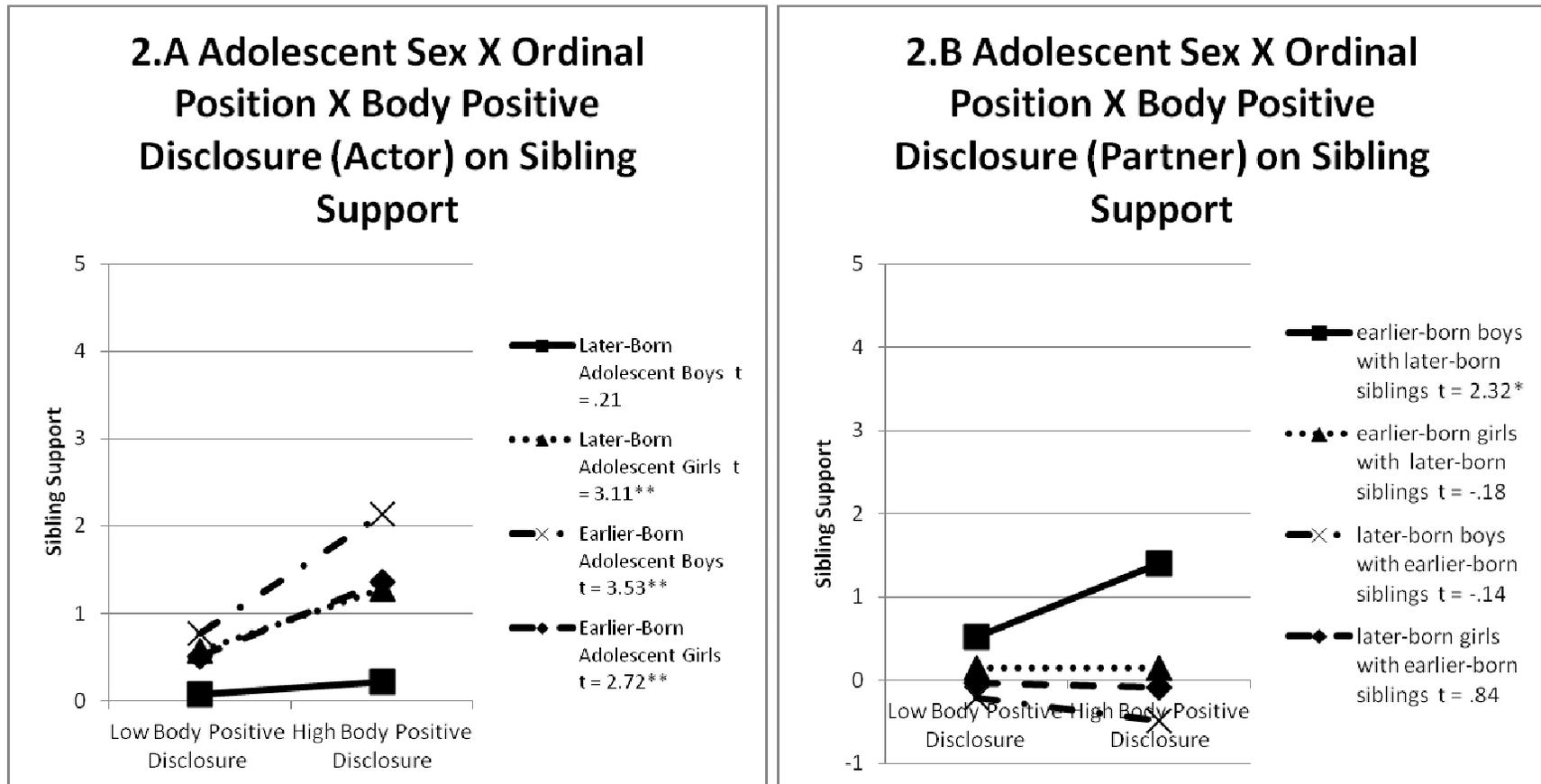
1.E Adolescent Sex X Ordinal Position X General Disclosure (Actor) on Competence in Physical Appearance



Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

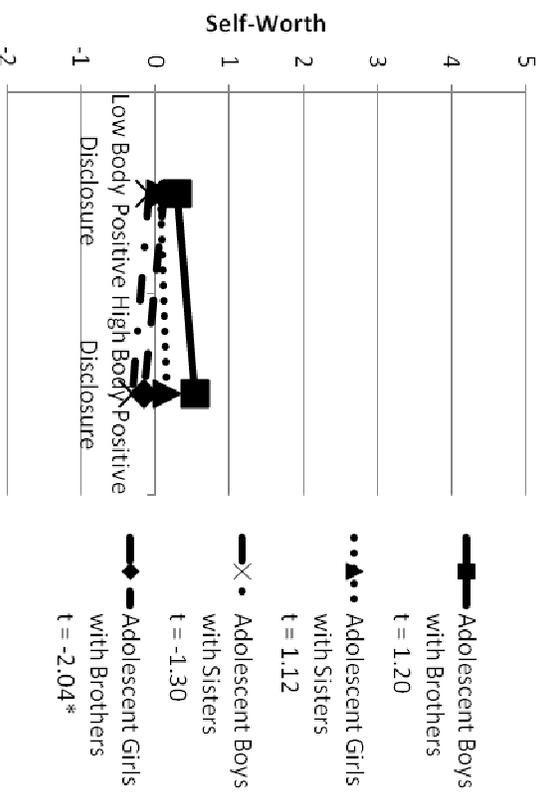
Figures 2.A – 2.H

Associations between Positive Body-Related Disclosure, Sibling Support, Self-Worth, Body-Esteem, and Competence in Physical Appearance

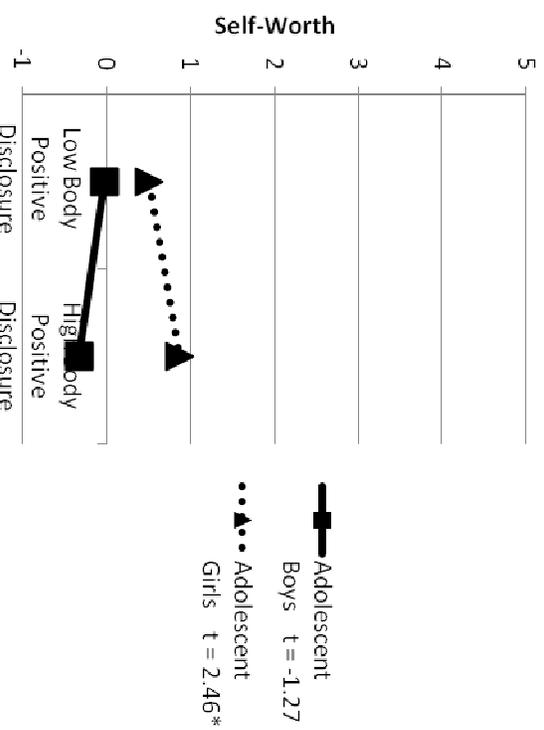


Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

2.C Adolescent Sex X Sibling Sex X Body Positive Disclosure (Partner) on Self-Worth

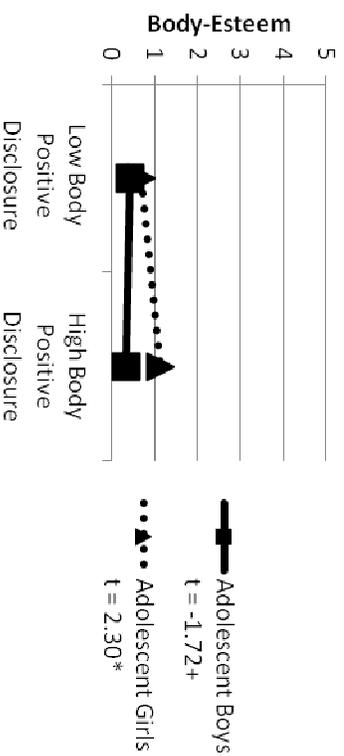


2.D Adolescent Sex X Body Positive Disclosure (Actor) on Self-Worth

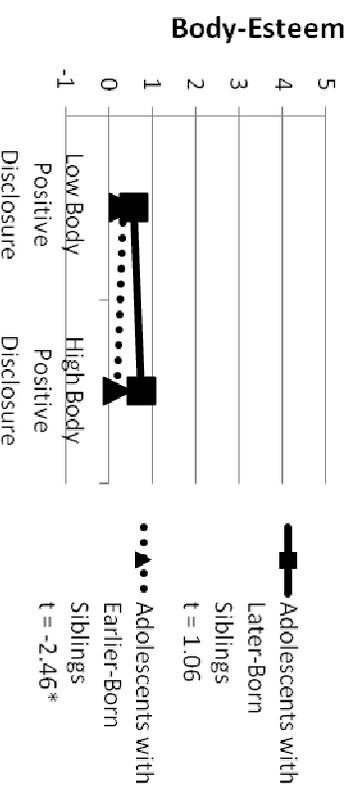


Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

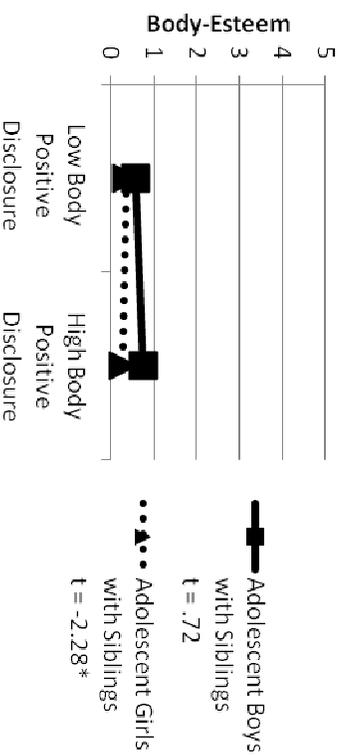
2.E Adolescent Sex X Body Positive Disclosure (Actor) on Body-Esteem



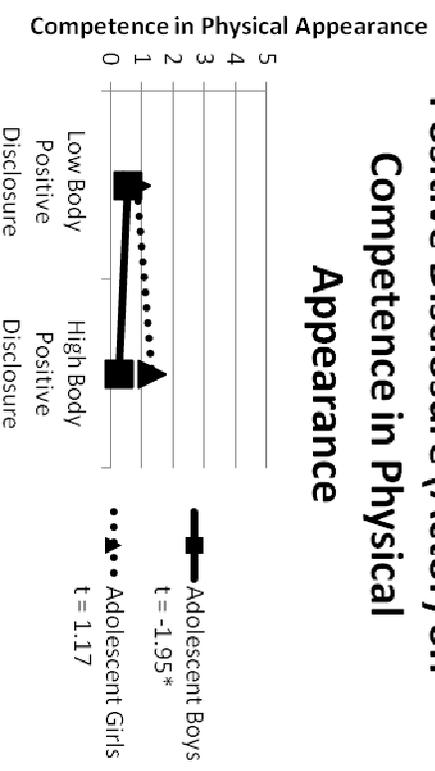
2.F Ordinal Position X Body Positive Disclosure (Partner) on Body-Esteem



2.G Adolescent Sex X Body Positive Disclosure (Partner) on Body-Esteem



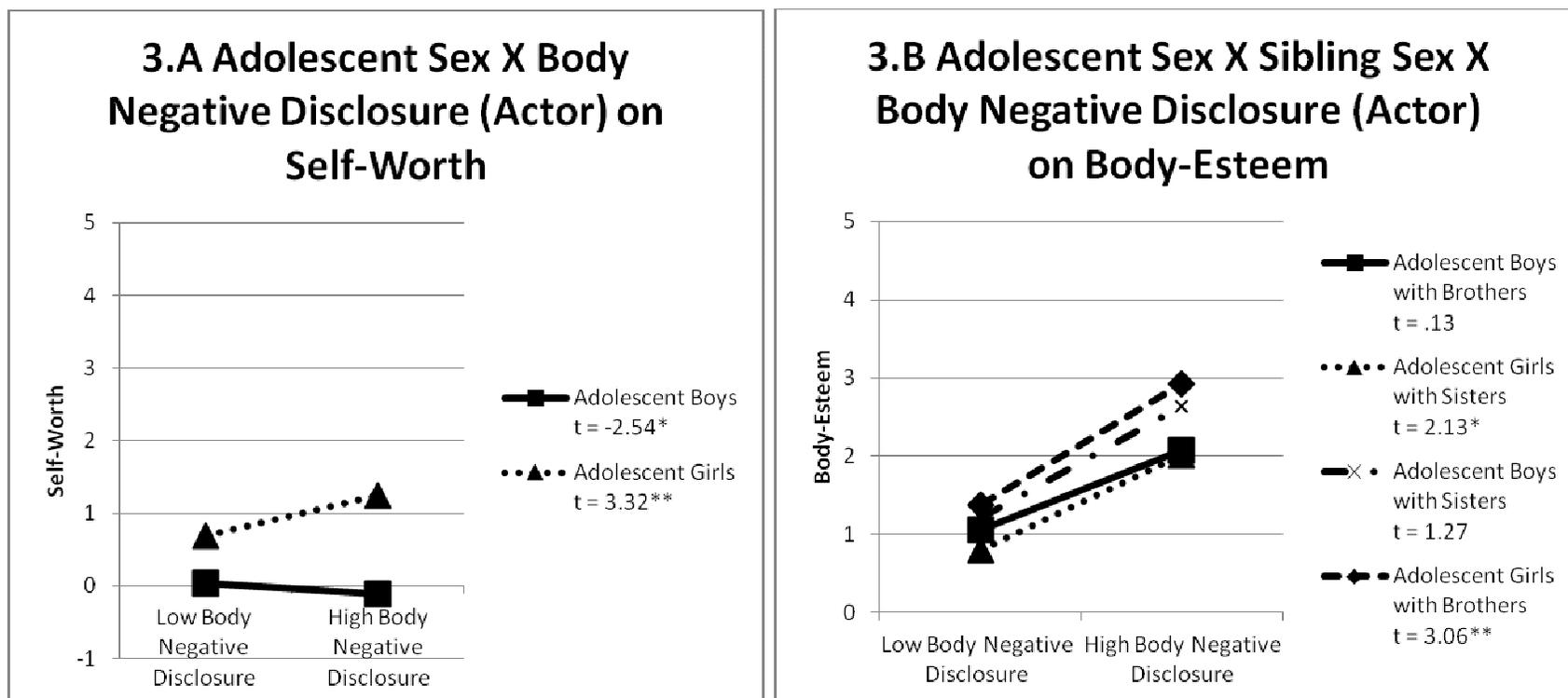
2.H Adolescent Sex X Body Positive Disclosure (Partner) on Competence in Physical Appearance



Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

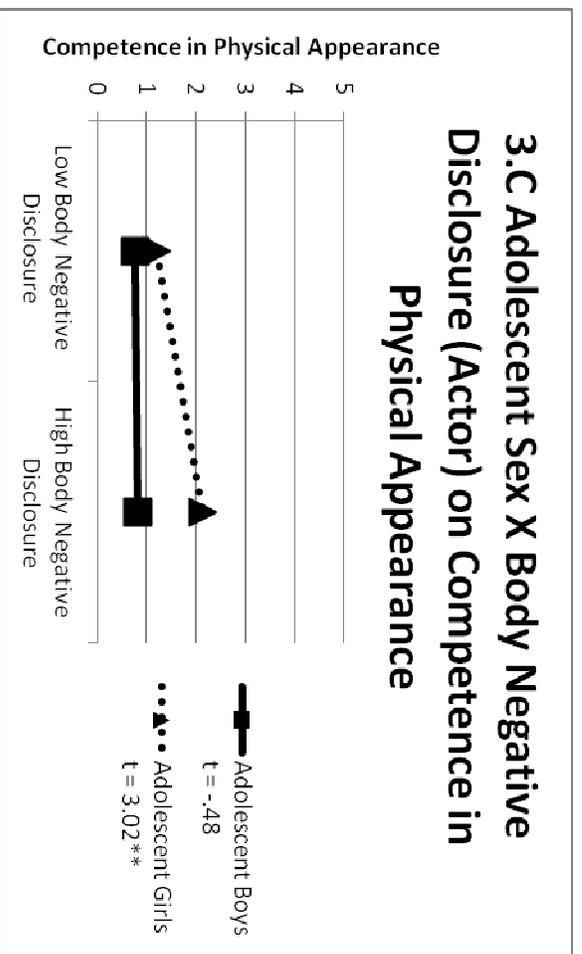
Figures 3.A – 3.C

Associations between Negative Body-Related Disclosure, Self-Worth, Body-Esteem, and Competence in Physical Appearance



Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

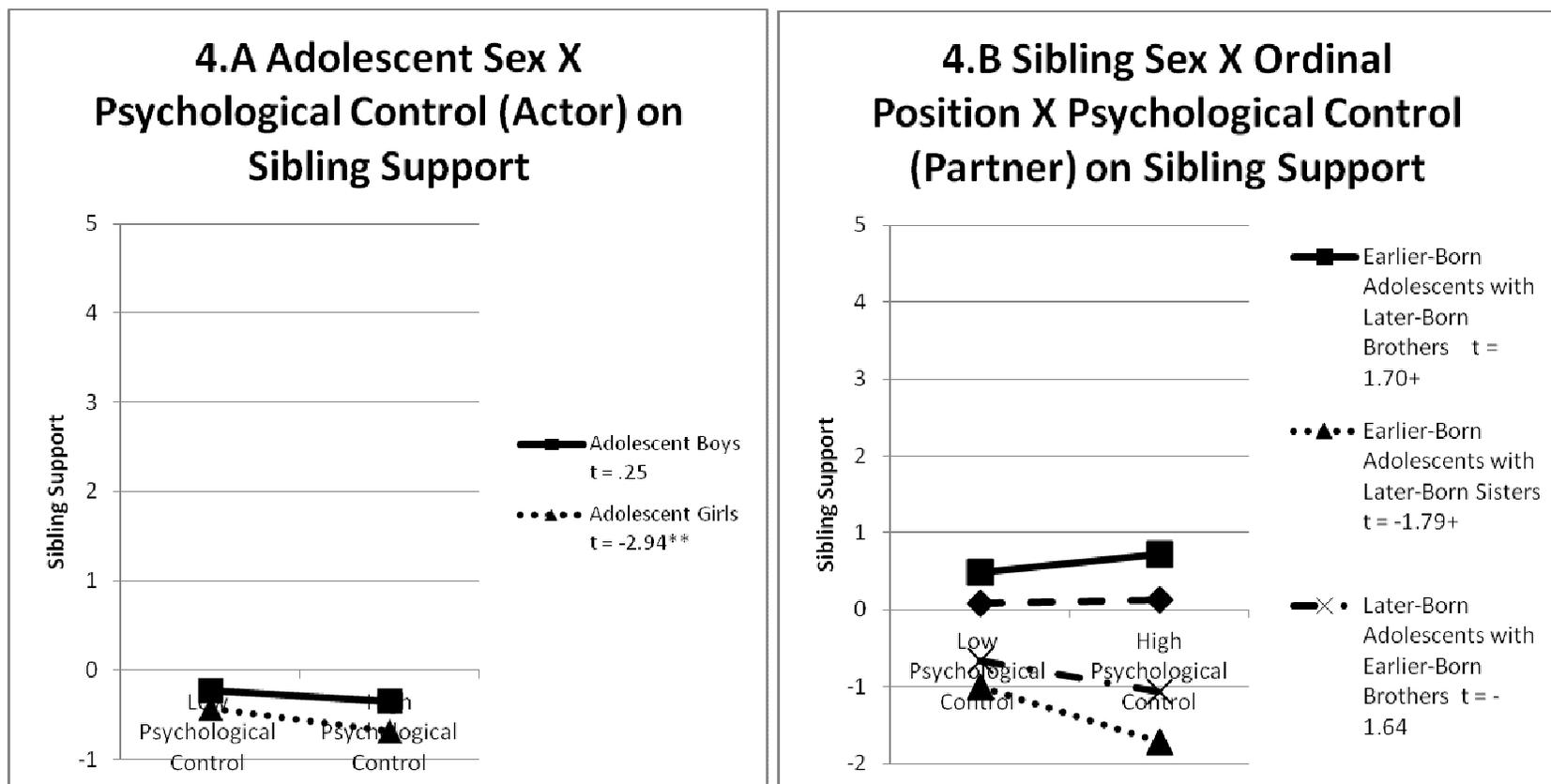
3.C Adolescent Sex X Body Negative Disclosure (Actor) on Competence in Physical Appearance



Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

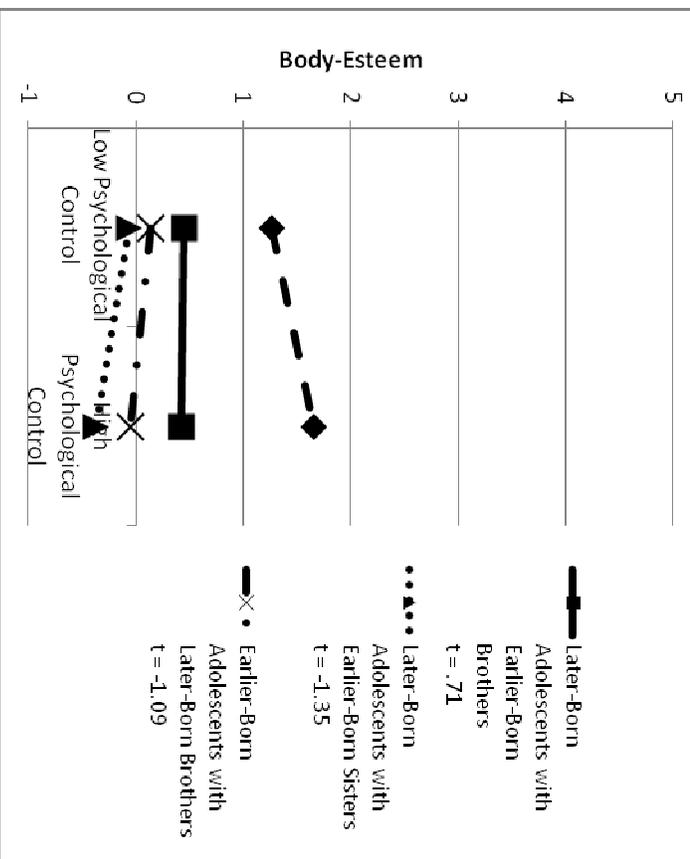
Figures 4.A – 4.D

Associations between Psychological Control, Sibling Support, Body-Esteem, and Competence in Physical Appearance

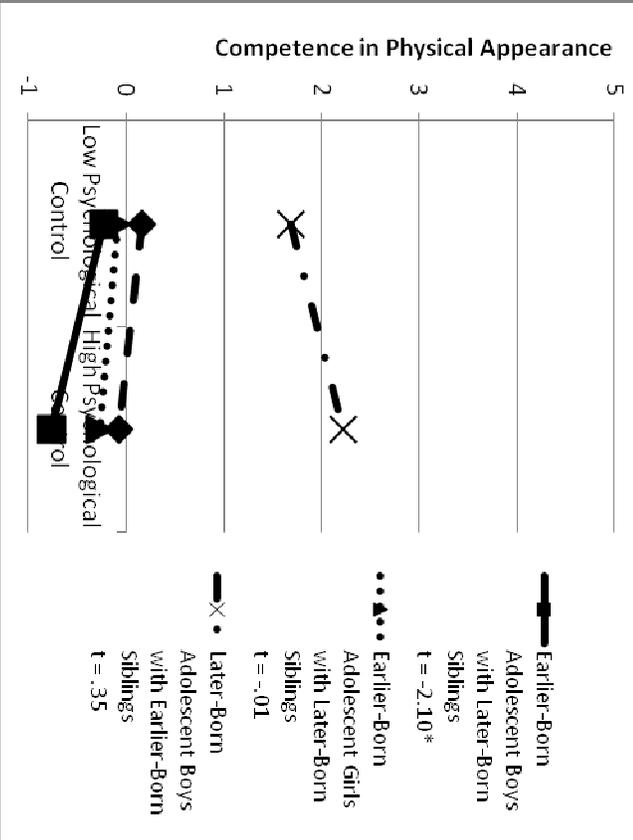


Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

4.C Sibling Sex X Ordinal Position X Psychological Control (Partner) on Body-Esteem



4.D Adolescent Sex X Ordinal Position X Psychological Control (Partner) on Competence in Physical Appearance



Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Appendix A

Adolescent Demographic Questionnaire
(completed by parent)

Please respond to the following questions about your OLDER (or YOUNGER) child who is participating in this study.

1) Your older/younger child is (check one):

- Male
 Female

2) Your older/younger child's current age: _____ birth date: _____

3) Your older/younger child's current grade in school: _____

4) School Grades: This semester (check one):

- 5 mostly A's
 4 mostly B's
 3 mostly C's
 2 mostly D's
 1 mostly F's

This past year (check one):

- 5 mostly A's
 4 mostly B's
 3 mostly C's
 2 mostly D's
 1 mostly F's

5) Your older/younger child is (check one) :

- Hispanic or Latino
 Not Hispanic or Latino

6) Your older/younger child is (check the one that best applies):

- Caucasian
 African American
 American Indian/Alaska Native
 Asian or Pacific Islander
 Other (describe): _____

7) Your older/younger child is currently living with (check all that apply):

- mother (birth mother or adopted)
- stepmother
- father (birth father or adopted)
- stepfather
- Other related or unrelated adults (who?) _____
- brothers and sisters (how many _____?) ages? _____

8) Please indicate your total household income for the past twelve months. Include money from all sources, including public assistance:

- Under \$25,000/year
- \$25,000 – 39,999/year
- \$40,000 – 54,999/year
- \$55,000 – 69,999/year
- \$70,000 – 84,999/year
- \$85,000 – 99,999/year
- Over \$100,000/year

9) Education: What is the HIGHEST educational degree you have received?

- 1 (Less than high school)
- 2 (Graduated high school)
- 3 (Some college)
- 4 (College Degree-Bachelor's)
- 5 (Graduate-M.A., Ph.D., M.D., Law)

10) Please indicate your current marital status

- Married, both birth parents (both adoptive parents)
- Married, step-parent family
- Single, never married
- Single, widowed
- Single, divorced or separated

Appendix B

Adolescent Demographic Questionnaire
(completed by adolescent)

Please respond to the following questions about yourself.

1) I am (check one):

- Male
 Female

2) My current age is _____

3) My birth date is _____

4) I am the (check one):

- First-born child in my family
 Second-born child in my family
 Third-born child in my family
 Later than third-born child in my family

5) My current height is _____ (feet) _____ (inches)

6) My current weight is _____

Appendix C

General and Body-Related Self-Disclosure

Look at the situations below and first, select the number that best describes HOW OFTEN you usually tell your mother (without her asking you) and then HOW OFTEN you usually tell your brother or sister participating in the study (without him/her asking you). If you never do these things or feel this way, please mark that item with an X. Mark an answer from X (I never do/feel this way) to 5 (I always tell).

X= I Never Do/Feel This Way, 1= Never Tell, 2= Very Infrequently, 3= Some of the Time, 4= Most of the Time, 5= Always Tell

- 1) What I talk about on the phone (*general*)
- 2) If I feel good about what or how much I eat during the day (*positive*)**
- 3) The websites I visit on the Internet (*general*)
- 4) How I feel about my schoolwork or grades (*general*)
- 5) If I feel good about my physical appearance (*positive*)**
- 6) What I write in emails, letters, or journals (*general*)
- 7) How I am glad I look just the way I do (*positive*)**
- 8) If I spend time with someone my parents don't like (*general*)
- 9) Whether I finish my homework or assignments (*general*)
- 10) If I feel dissatisfied with my body (*negative*)**
- 11) How I spend my free time (*general*)
- 12) How attractive I think I am (*positive*)**
- 13) If I curse or use swear words (*general*)
- 14) Whether I smoke cigarettes (*general*)
- 15) Whether or how much I try to eat healthy foods (*nutrition-oriented*)
- 16) How I am doing in different subjects at school (*general*)
- 17) Whether I watch R-rated movies or listen to R-rated CD's (*general*)
- 18) If I feel bad about my physical appearance (*negative*)**
- 19) How I spend my own money (*general*)
- 20) If or who I am dating (*general*)
- 21) How physically fit I am (*positive*)**

- 22) If I pass notes or don't listen in class (*general*)
- 23) If I hang out at a friend's house when no adult is at home (*general*)
- 24) If I feel guilty about what or how much I eat during the day (*negative*)**
- 25) How satisfied I am with my body (*positive*)**
- 26) Whether I felt happy, excited, or enthusiastic during the day (*general*)
- 27) Whether I have sex or am considering having sex (*general*)
- 28) Whether I am trying to gain muscle (*negative*)**
- 29) What I write in Texts/Instant Messages/Chats (*general*)
- 30) What I talk about with my friends on the phone (*general*)
- 31) How unattractive I think I am (*negative*)**
- 32) Whether I go out for after school sports or clubs (*general*)
- 33) Whether I felt unhappy, bored, or depressed during the day (*general*)
- 34) Whether I stay out late (*general*)
- 35) If I talk back, don't listen, or are rude to a teacher (*general*)
- 36) Whether I like my body size just the way it is (*positive*)**
- 37) My feelings towards my boy- or girl-friend (*general*)
- 38) Whether I am going to get a tattoo (*general*)
- 39) If I feel out of shape (*negative*)**
- 40) Which friends I spend time with (*general*)
- 41) Whether I am trying to lose weight (*negative*)**
- 42) Whether I go to parties where alcohol is served (*general*)
- 43) If I want to look like someone else (*negative*)**
- 44) Whether I cut class or school (*general*)
- 45) Whether or how much I exercise during the day (*nutrition-oriented*)

*Bolded items were averaged for a total score of either positive body-related disclosure or negative body-related disclosure. Nutrition-oriented items were not used in analyses.

Appendix D

Sibling Support

We would like you to answer the following questions about your mother (step-mother) and the sibling participating in this study. Sometimes the answers for different people may be the same, but sometimes they may be different.

1= Little or None, 2= Somewhat, 3= Very Much, 4= Extremely Much, 5= The Most

- 1) How much free time do you spend with this person?**
- 2) How much do you and this person get angry or upset with each other?
- 3) How much does this person teach you how to do things that you don't know?**
- 4) How much do you and this person get on each other's nerves?
- 5) How much do you talk about everything with this person?**
- 6) How much do you help this person with things he/she can't do by him/herself?**
- 7) How much does this person like or love you?**
- 8) How much does this person treat you like you're admired and respected?**
- 9) Who tells the other person what to do more often: you or this person?
- 10) How sure are you that this relationship will last no matter what?**
- 11) How much do you play around and have fun with this person?**
- 12) How much do you and this person disagree and quarrel?
- 13) How much does this person help you figure out or fix things?**
- 14) How much do you and this person get annoyed with each other's behavior?
- 15) How much do you share your secrets and private feelings with this person?**
- 16) How much do you protect and look out for this person?**
- 17) How much does this person really care about you?**
- 18) How much does this person treat you like you're good at many things?**
- 19) Between you and this person, who tends to be the BOSS in the relationship?
- 20) How sure are you that your relationship will last in spite of fights?**
- 21) How much do you go places and do enjoyable things with this person?**
- 22) How much do you and this person argue with each other?
- 23) How much does this person help you when you need to get something done?**

- 24) How much do you and this person hassle or nag each other?
- 25) How much do you talk to this person about things that you don't want others to know?**
- 26) How much do you take care of this person?**
- 27) How much does this person have a strong feeling of affection (loving or liking) toward you?**
- 28) How much does this person like or approve of the things that you do?**
- 29) In your relationship with this person, who tends to take charge and decide what should be done?
- 30) How sure are you that your relationship will continue in the years to come?**
- 31) How much do you turn to this person for support with personal problems?
- 32) How much do you depend on this person for help, advice, or sympathy?
- 33) When you are feeling down or upset, how often do you depend on this person to cheer things up?
- 34) How much does this person point out your faults or put you down?
- 35) How much does this person criticize you?
- 36) How much does this person say mean or harsh things to you?
- 37) How much does this person get his/her way when you two do not agree about what to do?
- 38) How much does this person end up being the one who makes the decisions for both of you?
- 39) How much does this person get you to do things his/her way?

*Bolded items were averaged for a total score of support.

Appendix E

Self-Worth

Read each statement all the way across, thinking about what you feel and how you are. Each statement describes two kinds of teenagers, one on the left and one on the right. For each statement, first decide which kind of teen you are most like, the one on the left or the one on the right. Then, for that kind of teen, check whether that description is really true for you or just sort of true for you. So for each numbered item you will be checking only one box. For some statements the check will be on the left, for other statements the check will be on the right. **Do not check both sides for any single statement. Similarly, do not check the same sides for all of the statements.**

Example

	<i>Really True for Me</i>	<i>Sort of True for Me</i>		BUT		<i>Sort of True for Me</i>	<i>Really True for Me</i>
A.	X		<i>Some teens are shy.</i>	BUT		<i>Other teens are outgoing.</i>	
B.			<i>Some teens are talkative</i>	BUT		<i>Other teens are quiet.</i>	X
C.		X	<i>Some teens are timid.</i>	BUT		<i>Other teens are bold.</i>	

- 1) Some teenagers feel that they are just as smart as others their age. BUT Other teenagers aren't so sure and wonder if they are smart.
- 2) Some teenagers find it hard to make friends. BUT For other teenagers it's pretty easy.
- 3) Some teenagers do very well at all kinds of sports. BUT Other teenagers don't feel that they are very good when it comes to sports.
- 4) Some teenagers are not happy with the way they look. BUT Other teenagers are happy with the way they look.
- 5) Some teenagers feel that they are ready to do well at a part-time job. BUT Other teenagers feel that they are not quite ready to handle a part-time job.
- 6) Some teenagers feel that if they are romantically interested in someone, that person will like them back. BUT Other teenagers worry that when they like someone romantically, that person won't like them back.
- 7) Some teenagers usually do the right thing. BUT Other teenagers often don't do what they know is right.
- 8) Some teenagers are able to make really close friends. BUT Other teenagers find it hard to make really close friends.
- 9) Some teenagers are often disappointed with themselves. BUT Other teenagers are pretty pleased with themselves.
- 10) Some teenagers are pretty slow in finishing their school work. BUT Other teenagers can do their school work more quickly.
- 11) Some teenagers have a lot of friends. BUT Other teenagers don't have very many friends.
- 12) Some teenagers think they could do well at just about any new athletic activity. BUT Other teenagers are afraid they might not do well at a new athletic activity.
- 13) Some teenagers wish their body was different. BUT Other teenagers like their body the way it is.

- 14) Some teenagers feel that they don't have enough skills to do well at a job. BUT Other teenagers feel that they do have enough skills to do a job well.
- 15) Some teenagers are not dating the people they are really attracted to. BUT Other teenagers are dating those people they are attracted to.
- 16) Some teenagers get in trouble for the things they do. BUT Other teenagers usually don't do things that get them into trouble.
- 17) Some teenagers do have a close friend they can share secrets with. BUT Other teenagers do not have a really close friend they can share secrets with.
- 18) Some teenagers don't like the way they are leading their life. BUT Other teenagers do like the way they are leading their life.
- 19) Some teenagers do very well at their classwork. BUT Other teenagers don't do very well at their classwork.
- 20) Some teenagers are very hard to like. BUT Other teenagers are really easy to like.
- 21) Some teenagers feel that they are better than others their age at sports. BUT Other teenagers don't feel they can play as well.
- 22) Some teenagers wish their physical appearance was different. BUT Other teenagers like their physical appearance the way it is.
- 23) Some teenagers feel that they are old enough to get and keep a paying job. BUT Other teenagers do not feel they are old enough, yet, to really handle a job.
- 24) Some teenagers feel that people their age will be romantically attracted to them. BUT Other teenagers worry about whether people their age will be attracted to them.
- 25) Some teenagers feel really good about the way they act. BUT Other teenagers don't feel that good about the way they act.
- 26) Some teenagers wish they had a really close friend to share things with. BUT Other teenagers do have a close friend to share things with.
- 27) Some teenagers are happy with themselves most of the time. BUT Other teenagers are often not happy with themselves.
- 28) Some teenagers have trouble figuring out the answers in school. BUT Other teenagers almost always can figure out the answer.
- 29) Some teenagers are popular with others their age. BUT Other teenagers are not very popular.
- 30) Some teenagers don't do well at new outdoor games. BUT Other teenagers are good at new games right away.
- 31) Some teenagers think that they are good looking. BUT Other teenagers think that they are not very good looking.
- 32) Some teenagers feel like they could do better at work they do for pay. BUT Other teenagers feel that they are doing really well at work they do for pay.
- 33) Some teenagers feel that they are fun and interesting on a date. BUT Other teenagers wonder about how fun and interesting they are on a date.
- 34) Some teenagers do things they know they shouldn't do. BUT Other teenagers hardly ever do things they know they shouldn't do.
- 35) Some teenagers find it hard to make friends they can really trust. BUT Other teenagers are able to make close friends they can really trust.
- 36) Some teenagers like the kind of person they are. BUT Other teenagers often wish they were someone else.
- 37) Some teenagers feel they are pretty intelligent. BUT Other teenagers question whether they are intelligent.

- 38) Some teenagers feel that they are socially accepted. BUT Other teenagers wished that more people their age accepted them.
- 39) Some teenagers do not feel that they are very athletic. BUT Other teenagers feel that they are very athletic.
- 40) Some teenagers really like their looks. BUT Other teenagers wished they looked different.
- 41) Some teenagers feel that they are really able to handle the work on a paying job. BUT Other teenagers wonder if they are really doing as good a job at work as they should be doing.
- 42) Some teenagers usually don't go out with the people they would really like to date. BUT Other teenagers do go out with the people they really want to date.
- 43) Some teenagers usually act the way they know they are supposed to. BUT Other teenagers often don't act the way they are supposed to.
- 44) Some teenagers don't have a friend that is close enough to share really personal thoughts with. BUT Other teenagers do have a close friend that they can share personal thoughts with.
- 45) Some teenagers are very happy being the way they are. BUT Other teenagers wish they were different.

Appendix F
Body-Esteem (The Body Esteem Scale)

Look at the situations below and select the response (strongly disagree to strongly agree) that best represents how you view yourself.
1= Strongly Disagree, 2= Disagree, 3= Agree, 4= Strongly Agree

- 1) I like what I look like in pictures
- 2) Kids my own age like my looks
- 3) I'm pretty happy about the way I look
- 4) Most people have a nicer body than I do (R)
- 5) My weight makes me unhappy (R)
- 6) I like what I see when I look in the mirror
- 7) I wish I were thinner (R)
- 8) There are lots of things I'd change about my looks if I could (R)
- 9) I'm proud of my body
- 10) I really like what I weigh
- 11) I wish I looked better (R)
- 12) I often feel ashamed of how I look (R)
- 13) Other people make fun of the way I look (R)
- 14) I think I have a good body
- 15) I'm looking as nice as I'd like to
- 16) It's pretty tough to look like me (R)
- 17) I wish I were fatter (R)
- 18) I often wish I looked like someone else (R)
- 19) My classmates would like to look like me
- 20) I have a high opinion about the way I look
- 21) My looks upset me (R)
- 22) I'm as nice looking as most people
- 23) My parent like my looks
- 24) I worry about the way I look (R)

*Reversed-scored items indicated by (R).

Body-Esteem (Contingencies of Self-Worth)

Below are several thoughts that adolescents may or may not have. Read the following statements and rate on a scale from 1 to 7 how strongly you agree or disagree

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

- 1) I don't care what other people think of me
- 2) My self-esteem does not depend on whether or not I feel attractive (R)**
- 3) Doing better than others gives me a sense of self-respect
- 4) My self-esteem is influenced by my academic achievement
- 5) It is important to my self-respect that I have a family that cares about me
- 6) My self-esteem depends on whether or not I follow my moral/ethical principles
- 7) My self-esteem goes up when I feel that God loves me
- 8) What others think of me has no effect on what I think about myself
- 9) My self-esteem is influenced by how attractive I think my face or facial features are**
- 10) Knowing that I am better than others on a task raises my self-esteem
- 11) I feel better about myself when I know I'm doing well academically
- 12) When my family members are proud of me, my sense of self-worth increases
- 13) My self-esteem would suffer if I did something unethical
- 14) I feel worthwhile when I have God's love
- 15) I don't care if other people have a negative opinion of me
- 16) My sense of self-worth suffers whenever I think I don't look good**
- 17) My self-worth is affected by how well I do when I am competing with others
- 18) Doing well in school gives me a sense of self-respect
- 20) I couldn't respect myself if I didn't live up to a moral code
- 21) My self-esteem would suffer if I didn't have God's love
- 22) My self-esteem depends on the opinions others hold of me
- 23) My self-esteem is unrelated to how I feel about the way my body looks (R)**
- 24) My self-worth is influenced by how well I do on competitive tasks
- 25) I feel bad about myself whenever my academic performance is lacking
- 26) When I don't feel loved by my family, my self-esteem goes down
- 27) Whenever I follow my moral principles, my sense of self-respect gets a boost

- 28) My self-worth is based on God's love
- 29) I can't respect myself if others don't respect me
- 30) When I think I look attractive, I feel good about myself**
- 31) I feel worthwhile when I perform better than others on a task or skill
- 32) My opinion about myself isn't tied to how well I do in school
- 33) My self-worth is not influenced by the quality of my relationships with my family members
- 34) Doing something I know is wrong makes me lose my self-respect
- 35) When I think that I'm disobeying God, I feel bad about myself

*Bolded items were averaged for a total score of appearance-related self-worth. Reversed-scored items indicated by (R).

Body-Esteem (Harter's Physical Appearance Subscale)

Read each statement all the way across, thinking about what you feel and how you are. Each statement describes two kinds of teenagers, one on the left and one on the right. For each statement, first decide which kind of teen you are most like, the one on the left or the one on the right. Then, for that kind of teen, check whether that description is really true for you or just sort of true for you. So for each numbered item you will be checking only one box. For some statements the check will be on the left, for other statements the check will be on the right. **Do not check both sides for any single statement. Similarly, do not check the same sides for all of the statements.**

Example

<i>Really True for Me</i>	<i>Sort of True for Me</i>			<i>Sort of True for Me</i>	<i>Really True for Me</i>
A. X		<i>Some teens are shy.</i>	<i>BUT</i>	<i>Other teens are outgoing.</i>	
B.		<i>Some teens are talkative</i>	<i>BUT</i>	<i>Other teens are quiet.</i>	X
C.	X	<i>Some teens are timid.</i>	<i>BUT</i>	<i>Other teens are bold.</i>	

- 4) Some teenagers are not happy with the way they look. BUT Other teenagers are happy with the way they look.
- 13) Some teenagers wish their body was different. BUT Other teenagers like their body the way it is.
- 22) Some teenagers wish their physical appearance was different. BUT Other teenagers like their physical appearance the way it is.
- 31) Some teenagers think that they are good looking. BUT Other teenagers think that they are not very good looking.
- 40) Some teenagers really like their looks. BUT Other teenagers wished they looked different.

Appendix G

Psychological Control

As teenagers grow, they learn more and more about their parents and siblings and how family members interact with each other. We would like you to describe some of your experiences in your family. Please read each statement on the following pages and select the answers that most closely describe the way your MOTHER/SIBLING acts towards you.

My mother/sibling is a person who...

1= Not Like Her/Sibling, 2= Somewhat Like Her/Sibling, 3= A Lot Like Her/Sibling

- 1) Changes the subject, whenever I have something to say
- 2) Finishes my sentences whenever I talk
- 3) Often interrupts me
- 4) Acts like she (he) knows what I'm thinking or feeling
- 5) Would like to be able to tell me how to feel or think about things all the time
- 6) Is always trying to change how I feel or think about things
- 7) Blames me for other family members' problems
- 8) Brings up my past mistakes when she (he) criticizes me
- 9) Tells me that I am not a loyal or good member of the family
- 10) Tells me all of the things she (he) has done for me
- 11) Says, if I really cared for her (him), I would not do things that cause her (him) to worry
- 12) Is less friendly with me when I have disappointed her (him)
- 13) Will avoid looking at me when I have disappointed her (him)
- 14) If I have hurt her (his) feelings, stops talking to me until I please her (him) again
- 15) Often changes her (his) moods when with me
- 16.) Goes back and forth between being warm and critical toward me

VITA

The author was born in Rochester, NY on April 29, 1983. She attended Roberts Wesleyan College from 2002 to 2006 and graduated with a Bachelor of Arts degree in Psychology (with Honors). She came to the University of Missouri in the fall of 2007 and began her graduate studies in Developmental Psychology in the Department of Psychological Sciences. She received the Maxwell Fellowship from the University of Missouri. She pursued her research in adolescent sibling relationships under the direction of Professor Nicole Campione-Barr and received the Doctorate of Philosophy degree in 2013.