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**Social Integration and Gender Differences in Adolescent Depression:  
School Context, Friendship Groups, and Romantic Relations**

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**Social Integration and Gender Differences in Adolescent Depression:  
School Context, Friendship Groups, and Romantic Relations**

**by**

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## **Dedication**

This dissertation is dedicated to my grandparents, Cleo and Dee Gore, with all my love.

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A Latin proverb reminds us that if the wind will not serve, take to the oars. This dissertation is definitely the product of much rowing. But thankfully, I was not the only one on the ship. I am indebted to so many at The University of Texas and The Population Research Center for their support and guidance. I would like to give special thanks to all of my wonderful committee members, Robert Crosnoe, Kelly Raley, Debra Umberson, Shannon Cavanagh, and Elizabeth Vandewater, who were always available to offer assistance. I would also especially like to thank Kelly Raley for the outstanding methodological instruction I received as her NICHD trainee. Furthermore, I cannot thank Robert Crosnoe enough for his tireless mentorship. Without his direction and motivation, the completion of this dissertation would have been impossible. I am truly fortunate to have been able to work with him.

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# **Social Integration and Gender Differences in Adolescent Depression: School Context, Friendship Groups, and Romantic Relations**

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This dissertation investigates the social nature of the gender difference in teen depression by studying its association with social integration at the institutional, group, and personal levels. Taking a developmentally appropriate approach to social integration, I focus on fit within the normative high school context, friendship group position, and involvement in romantic relationships. Based on a conceptual model derived from the strong theoretical assumptions of past literature, the starting point of this research is that the depression of girls, compared to boys, will be more reactive to social integration in positive and negative ways (social integration is conceptualized as a moderator). However, competing viewpoints are also considered to determine whether this traditional assumption masks greater reactivity for boys at these three distinct levels. The quantitative analyses utilize Waves I and II of the National Longitudinal Study of Adolescent Health (Add Health). Results indicate that boys are actually more reactive to a lack of social integration into the normative context of the school. Boys and girls' depression is equally sensitive to integration within the friendship group. Additionally,

girls' depression is more reactive to aspects of romantic relationship break-ups. To better explain the gender differences in teen depression, in-depth interviews of students from an Austin Independent School District high school are analyzed to identify the social and psychological mechanisms through which the elements of social integration are associated with depression. Qualitative results support key elements of the proposed conceptual model indicating social comparison and social feedback as the main mechanisms through which social integration is associated with psychological well-being for girls and boys, respectively.

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## **Chapter 1: Introduction**

### **Gender Differences in Adult Depression**

Social patterns of both depression and anxiety are striking, with half of all depressive symptoms explained by differences in social factors such as socioeconomic status, marital status, parental status, and gender. Of these social factors, the gender gap in depression is one of the most robust findings in mental health community surveys. (Mirowsky and Ross 2003). Across numerous cultures, ethnicities, and nations, women have approximately twice the likelihood of developing depression than men, regardless of how depression is measured (Nolen-Hoeksema 1990; Turner, Wheaton, and Lloyd 1995).

Most explanations of the social causes of depression and anxiety –including the gendered nature of depression– are grounded in some conceptualization of alienation (Mirowsky and Ross 2003), with an underlying assumption that being integrated into a social network is generally beneficial to mental health. Social integration has been operationalized in family research as indicating the number of others in the household (Ross 1995), while in other recent research it refers to the existence of specific important relationships (Umberson and Williams 1999). For adults, common measures of social integration include full time employment, marital status, and parenthood.

These life experiences presumably play a role in the divergent trajectories of depression experienced by men and women. Studies attempting to leverage social integration to understand these gender differences generally rely on one of two approaches. The most frequently used approach is that men and women have different experiences of social integration. This perspective (social integration as mediator)

assumes that factors such as sex role expectations and status differences between men and women are associated with levels of social integration, which in turn influence depression. The second approach is that men and women have different reactions to social integration. This perspective (social integration as moderator) supposes that women are more sensitive to lower levels of social integration than men. Different reactions to social integration introduce a more nuanced idea of gender reactivity to social integration and focus on the disparate ways that men and women relate to those with whom they have a relationship.

The general purpose of this dissertation is to apply what has been learned about the role of social integration in gender differences in adult depression to better understand the origins of these gender differences in adolescence. This focus on adolescence lends itself to the second strategy described above, namely focusing on the differential reactivity of boys and girls to social integration.

### **An Adolescent-Specific Approach**

Gender differences in depression emerge during adolescence. By late adolescence, girls are twice as likely as boys to be depressed (Kessler et al. 1993; Nolen-Hoeksema 2001). However, is it possible to study the relation between social integration and gender differences in depression during adolescence using the same approaches developed in the adult literature? Measures of social integration considered to be important for adults do not apply to the majority of adolescents since many do not have a full time job, are not married, and do not have children. Adolescence is a different part of the life course than adulthood and is distinguished by unique biological, cognitive, and social changes (Furstenberg 2000; Hill 1983). Many of the social changes experienced

during this time can serve as adolescent-specific measures of social integration since teens start to have more social contact centered around the high school context (Goodman et al. 2003; McNeely, Nonnemaker, and Blum 2002), spend more time with friends (Brown 1990), and begin having romantic relationships (Joyner and Udry 2000).

Although boys and girls develop increasingly social orientations during adolescence, they demonstrate important differences in the quality of relationships with others and in their reactivity to these relationships. Adolescent girls have relationships that are closer than those of boys (Collins and Laursen 1999). Girls are also more likely to use social evaluations when evaluating themselves (Giordano 2003; Martin 1996), and earlier studies have stressed girls' greater dependence on the acceptance of others to develop a positive self concept (Chodoff 1972; Witkin and Goodenough 1977). These differences suggest that the explanation detailing different reactions to social integration used in the adult literature –the social integration as moderator approach– is particularly relevant in describing gender disparities in adolescent depression.

### **Research Aims**

In short, girls and boys demonstrate divergent patterns of depression in adolescence as they become more relationship-oriented. Girls' different reactivity to social integration is a fruitful explanation for these dissimilarities in depression. But the actual evidence for greater female reactivity is mixed (Umberson et al. 1996), possibly due to the different ways social integration can be conceptualized. Social integration can be assessed in relation to an institution, social network, or another individual. It remains to be seen if girls are more reactive to social integration than boys on each of these different levels.

This dissertation investigates the social nature of the gender difference in teen depression by studying its association with social integration at the institutional, group, and personal levels. Taking a developmentally appropriate approach to social integration, I focus on fit within the normative high school context, peer network position, and romantic relationships. Based on the strong theoretical assumptions of past literature, the starting point of this research is that the depression of girls, compared to boys, will be more reactive to social integration in positive and negative ways. Yet, I also consider competing viewpoints to this basic assumption. In short, I compare and contrast girls and boys to determine whether this traditional assumption is valid.

This dissertation will utilize the detailed school, network, and personal data of the National Longitudinal Study of Adolescent Health (Add Health), supplemented by in-depth interviews of students in an Austin Independent School District high school, to accomplish the following aims:

1. To determine the extent to which the association between gender and depression is moderated by levels of social integration into the high school culture. Fit indexes will be created that compare individual responses (e.g. GPA, athletic participation) to corresponding summary characteristics of their high schools (mean GPA of all students in the school, overall rates of athletic participation). A multilevel model will predict CES-D depression scores by these measures of fit, gender, and interactions between the fit indices and gender. The starting hypothesis is that gender differences will be weaker in situations of good fit and stronger in situations of bad fit because social integration in this level will be more beneficial for girls and social isolation will be more risky. The results of

- this aim will gauge the extent of gender differences in depression during adolescence and then the degree to which these differences are related to the larger institutional context.
2. To examine the extent to which the association between gender and depression is moderated by levels of social integration into a friendship network. Multiple regression will be used to predict depression scores with measures of integration into the friendship group (centrality), level of involvement with friends, gender, and interactions between each friendship variable and gender. Again, the initial expectation is that gender differences in depression will be weaker with greater integration into the friendship group and stronger with decreased social integration. By determining the degree to which gender differences in depression are associated with integration into a friendship network, results will suggest disparities in gender reactivity to relationships with friends.
  3. To examine the extent to which the association between gender and depression is moderated by romantic activity. Similar to the analysis of integration into the peer network, multiple regression will be used to predict depression with gender, categorical variables indicating aspects of both participation and sexual activity in a romantic relationship (no relationship, ongoing serious / sexual relationship, ongoing non-serious / sexual relationship, etc.), and the interaction between gender and the romantic relationship variables. The initial expectation is that greater involvement in a romantic relationship (serious with sex) will be associated with increased depression for girls and decreased depression for boys.

Results will help to explain the association between romantic relationships and the emerging sex gap in teen depression.

4. To identify the social and psychological mechanisms through which the elements of social integration are associated with depression. Transcribed in-depth interviews of high school students provide an opportunity to further explain unanswered questions from the quantitative findings. A particular interest will be if depressive symptoms result from a psychological evaluation of not being socially integrated or by the social feedback received from others. Given findings from previous studies (e.g. Giordano 2003), the starting hypothesis is that social comparison will be the main mechanism for girls and social feedback will be the main mechanism for boys. Identification of the gender specific mechanisms through which social integration is associated with depression is a fundamental step in identifying the social psychological processes associated with gender reactivity and has the potential to improve programs and initiatives aimed at depressed teens by suggesting more effective gender-specific approaches.

### **Importance of the Research**

Depression can have life-long consequences for teens. Depression in adolescence has been linked to academic and interpersonal problems (Compas, Connor, and Hinden 1998), substance use (Patten et al. 1997), major depression in adulthood (Dunn and Goodyer 2006), and suicide (Mazza and Reynolds 1998; Reinherz et al. 1995).

Understanding how and why gender differences in adolescent depression emerge and are maintained, therefore, significantly advances our understanding of the etiology of depression throughout the life course (Allgood-Merten, Lewinsohn, and Hops 1990).

More specifically, this dissertation extends current knowledge about gender differences in adolescent depression in three ways. First, explanations used to understand adult depression are adapted to adolescents. This process shows whether this is an appropriate strategy given that teens are developmentally different from adults. Second, gender reactivity to social integration is emphasized and a more nuanced idea of differentials in male and female sensitivity to relationships can be explored. This allows the interaction between gender and social integration to be studied. And third, measuring social integration at three distinct levels permits a more detailed study of gender reactivity. Past studies have assumed that girls are generally more reactive to social integration than boys. The ability to detect deviations in reactivity by level of integration will support or refute this general assumption.

## **Chapter 2: Conceptual Model and Hypotheses**

In this chapter, I develop an initial conceptual model detailing the association between social integration and gender differences in depression. Accordingly, the enduring ideas and underlying assumptions established by the long tradition of studying social integration and mental health outcomes in sociology are discussed. Competing explanations of the gender difference in social integration and depression are evaluated to select the one most relevant to adolescents. Then, I establish the importance of feedback and social comparison as gender specific mechanisms through which social integration is associated with depression. Finally, a conceptual model is presented and used to guide the formulation of hypotheses concerning the extent to which the association between gender and depression is moderated by three distinct levels of social integration.

### **Social Integration and Mental Health**

Social integration has long been a central concern of sociology (Berkman et al. 2000). Some of the earliest theories about social relationships and their influence on health outcomes can be traced to Emile Durkheim. Durkheim's classic *Suicide* ([1865] 1966) is still one of the most influential statements of how social integration can affect individual well being. Durkheim found that those who were more individualistic and autonomous had higher suicide rates than people with stronger bonds to others. Furthermore, suicide increased among isolated individuals in the spring and summer when they noticed others participating in social activities. These findings supported Durkheim's assumptions that people are naturally social (Wallwork 1972) and that appropriate levels of social integration are necessary for individuals to prosper (Hughes,

Martin and Sharrock 1999, 168). Durkheim's basic assumptions still influence current conceptions of how social integration benefits mental health by meeting basic human needs for social contact (Wheaton 1985) and providing the positive interactions that lead to increased self worth and self esteem (Lincoln, Chatters and Taylor 2005).

Since *Suicide*, a distinction has been made between the structural conception of social integration and the functional conception of social support. Social integration can basically be thought of as the existence of specific important relationships (Umberson and Williams 1999). Studies looking at isolation are more concerned with the main effects of social integration (Mirowsky and Ross 2003). Greater degrees of integration into a social network have been found to have direct and positive effects on psychological well-being (Barnett and Gotlib 1988; Kawachi and Berkman 2001). However, research regarding gender differences in levels of social integration and psychological well-being has produced inconsistent results (Umberson et al. 1996).

In contrast, social support is most often thought of as a functional resource that can be used to mediate or buffer the impact of stress on psychological well-being (Aneshensel 1999; Thoits 1999). Studies of social support tend to focus on the emotionally sustaining aspects of relationships (Umberson et al. 1996). Psychological well-being has been found to be associated with social support in numerous studies (House, Umberson, and Landis 1988; Yang 2006). Although basic aspects of social support are considered, I focus on the more direct effects of social integration.

### **Gender Differences in Depression**

Differences in mental health can be observed between the specific stages of the life cycle. Young adults are the most anxious and depressed, the middle aged are least

depressed, and older people are the least anxious but experience increased depression (Mirowsky and Ross 2003). However, differences in mental health outcomes can also exist within the same life cycle stage. Gender disparities in depression are one such example since they emerge during adolescence and persist throughout the life course (Nolen-Hoeksema and Girgus 1994). In early adolescence, depression rates begin to increase dramatically for girls. By late adolescence, girls are twice as likely as boys to be depressed (Kessler et al. 1993; Nolen-Hoeksema 2001).

Numerous explanations have been offered for how social integration is associated with gender differences in depression across the life course. These explanations have mostly been developed in studies using adult samples and can be grouped into two approaches. The first approach stresses that men and women have different experiences of social integration and the second emphasizes that men and women react differently to social integration.

The first approach, concerned with different experiences of social integration, holds that factors such as status differences in the structural positions of men and women in society are associated with dissimilar constraints and demands that influence levels of social integration and types of relationships with others (Epstein 1988; Fischer and Olicker 1983). This approach conceptualizes social integration as a *mediator*. As the traditional head of household and primary earner, men are allowed greater power (Rosenfield 1999), have more prestige, and experience less social isolation (Bird and Ross 1993). Conversely, women are more likely to have jobs with lower income and less prestige (Jacobs and Steinberg 1990; Lennon 1999) that require emotional labor and providing care to others, such as a teacher or nurse. Women are also more likely to be responsible

for child care (Bianchi 2000) and occupy a subordinate position in marriage (Brown and Lewis 2004; England and Kilbourne 1990). Providing care to others influences women to subjugate their personal needs (Baines, Evans, and Neysmith 1991) and taking care of their own children limits opportunities for relationships and social interactions with other adults (Bianchi 2000; Mirowsky and Ross 2003, 92).

The second approach, concerned with different male and female reactions to social integration, is based largely on differences in lifelong gender socialization. Men are encouraged to be autonomous, aggressive, and competitive. Women are socialized to show emotions, be nurturing, focus on relationships, and develop a stronger sense of caring for others (Gilligan 1982; Marini 1988). As a result of learning this greater interpersonal orientation, researchers argue that women develop a sense of self in connection with others (Cyranowski et al. 2000) and are more sensitive to lower levels of social integration than men. Thus, social integration acts as a *moderator*. Women are hypothesized as more likely to develop depression in response to interpersonal stressors and to be at a higher risk of depression when relationships end (Nolen-Hoeksema 2001).

These two approaches leverage social integration to explain the gendered nature of depression across the life course. Since this dissertation is focused on adolescence, the general approach must be tailored to this developmental stage.

### *Choosing an Adolescent Suitable Approach*

The study of adolescent depression is a relatively new field (Nolen-Hoeksema 2001). Because depression was previously considered as aggression turned towards one's self, the psychiatric community claimed that depression in children and young adolescents would violate basic psychodynamic tenets since the punitive super ego and

self concept were not fully developed (Kazdin 1990). And since social scientists believed that adolescence was naturally a stressful and unstable stage of the life cycle, adolescent depression was assumed to be normal and common (Robertson and Simons 1989). Research has since shown that not only can children suffer from depression, but the core symptoms of depression among young people are the same as those of depressed adults (Harrington 2001; Nolen-Hoeksema and Girgus 1994). This suggests that a common approach can be used to explain depression in children and adults. Since the basic symptoms of depression are the same for adults and children and because the explanations dealing with the association between social integration and gender differences in adult depression are better developed, these adult explanations can be effectively applied to adolescent depression.

Evaluating which of the two approaches discussed above is most appropriate in studying adolescents requires careful consideration. Regarding the first approach that details different experiences of social integration, results from various studies suggest that adolescent girls do not have lower levels of social integration than boys. Female relationships tend to be closer than those of boys (Collins and Laursen 1999), adolescent girls express greater interest in their close friends, place more importance on maintaining their friendships, and expect more intimacy from their friends (Clark and Ayers 1993; Kuttler, LaGreca, and Prinstein 1999). In addition, many of the status differences assumed to be important by the first approach such as being the primary income earner, housewife, or primary child care provider do not apply to adolescents.

The second approach, emphasizing different reactions to social integration, is much more relevant during adolescence, when boys and girls are developing increasingly

social orientations. Findings from earlier studies have highlighted girls' greater dependence on the acceptance of others in developing increased self-esteem and positive self-concepts (Chodoff 1972). In addition, some argue that girls have a field dependent cognitive style that makes them more vulnerable to social stressors than boys (Witkin and Goodenough 1977). More recent studies have also found that girls are more likely to use social evaluations when evaluating themselves (Giordano 2003; Martin 1996). These accumulated findings suggest that adolescent girls are more reactive to decreased social integration than boys.

#### *Explaining Female Sensitivity to Lower Levels of Integration*

Accepting the approach detailing different depressive reactions to social integration, and thereby assuming that social integration will serve as a moderator, requires a consideration for the explanations of why girls are more reactive to lower levels of social integration. Explanations have been offered by several researchers. Chodorow (1978) argues that since a majority of children are cared for by women, everyone initially develops a feminine identity at an early age. Girls are allowed to maintain this feminine identity and keep the attachment to their mothers whereas boys must make a dramatic break in order to establish a masculine identity. From an object-relations perspective, girls consolidate their identities with their mothers since a dis-identification is never made. This initial relationship with the mother serves as a blueprint for future relationships. Thus, women are more likely to have problems in developing a sense of separation from others later in life and may experience a loss of self when they are in relationships with other people.

Other explanations of why girls are more sensitive to lower levels of integration focus on differences in socialization. These socialization theories are particularly interested in the influence of parents, teachers, and peers. Parents tend to roughhouse more with their sons, encourage stereotypical gender-appropriate play themes, and talk more about emotions with their daughters, but no other consistent differences have been identified in parent's treatment of sons and daughters (Maccoby 1998, 123). Teachers have been found to provide boys with more attention and praise than girls (American Association of University Women 1992; Sadker and Sadker 1994). But because girls increasingly outperform boys in academics, current research argues that the educational system actually devotes more attention to the needs of girls (Sommers 2000). Whereas these early contributions from parents and teachers may be important in shaping sex typed behavior in children (Fagot et al. 1985), peer groups provide an interactive context in which the meaning of gender is reinforced (Thorne 1993).

The importance of peers increases during the school years and becomes especially significant during adolescence. Young boys and girls segregate themselves into same-sex friendship and play groups at an early age. Both groups develop different cultures in which specific male and female styles of interaction are learned. Boys learn to be more physical in their play styles, competitive, and physically aggressive. Girls play in smaller groups, tend to be more cooperative, engage in turn taking play, and express greater self-disclosure to each other (Maccoby 1998; Thorne and Luria 1986). The different styles of interaction learned in each group help further socialize boys to be more independent while girls learn the importance of maintaining relationships.

Same-sex friendship groups also teach boys and girls how to assess their respective social worth. Maccoby (1998) illustrates that the rough play style and more aggressive discourse of boys serve to establish a dominance hierarchy for the male group. Boys are more concerned about maintaining dominance than girls (Whiting and Edwards 1988) and male hierarchies are more defined than those of girls (Ridgeway, Diekema, and Johnson 1995). For boys, increased dominance in the group signifies higher rank in the hierarchy and greater social worth through status. Boy's interest in dominance combined with rough play styles also establish physical standards that can be used to gauge group standing and social worth. Boys, therefore, learn to rely more on social feedback to assess their status within the group. Whereas the classical meaning of social feedback indicates the attempt of individuals to define themselves by taking into account the responses of others (Meade 1934, 69), more modern conceptions concern the development of self-awareness through communication with others (Larson 1984). Whatever definition is accepted, the most important elements of social feedback for boys are the fairly concrete standards for judging social worth and the relatively straight forward nature of the feedback.

Conversely, the more cooperative play style and more reciprocal discourse of girls' peer groups support the formation of connections between girls. Increased connections lead to greater female social worth through popularity. For girls, the assessment of popularity is more difficult since no objective or physical standards exist to judge personal popularity. Therefore, girls learn to rely on social comparisons instead of more direct feedback. Contemporary reformulations of social comparison have added much more complexity (Buunk and Mussweiler 2001) to the original conception

proposed by Festinger (1954). However, social comparison can be conceptualized as a comparison of oneself to others in order to gauge relative worth (e.g. Giordano 2003).

### **Section Summary and Development of a Conceptual Model**

A focus on social integration is especially relevant given the increased social orientation of teens during adolescence and the demonstrated association between social integration and adolescent mental health problems. The two approaches for understanding how social interaction is associated with gender differences in depression are that men and women have different experiences of social integration and that men and women have different reactions to social integration. In evaluating which of these two approaches is most appropriate for studying gender differences in adolescent depression, I concluded that different reactions to social integration is more suitable since many of the status differences deemed important have not been fully realized by youths, differences exist in relationship quality for boys and girls, and research suggests that adolescent girls are more reactive to social integration.

Using the approach that details gender differences in reactions to social integration as a foundation enabled me to develop a conceptual model. Girls and boys receive different early socialization experiences from parents and teachers. Segregated same-sex friendship groups accentuate these differences in socialization by encouraging boys to be physical and competitive whereas girls are encouraged to be caring and cooperative. The different interaction styles learned in early friendship groups are also associated with how boys and girls assess their self worth. Boys gauge their status through feedback and girls assess their popularity with social comparison. As such, feedback and social comparison serve as the gender specific mechanisms through which

social integration is associated with depression. Social integration is conceptualized as a moderator with girls being more reactive to social integration since they are socialized to maintain relationships and utilize social evaluations when assessing themselves.

## **Hypotheses**

Because adolescents are the focus of study, certain modifications must be made to the original ‘social integration as moderator’ approach. Measures of social integration considered to be important must give way to measures tapping the social changes experienced during adolescence, such as increased social contact centering on the high school context, more time spent with friends, and the beginning of romantic relationships.

Gender differences in reactivity to social integration have strong theoretical support, but empirical findings have been weak and often contradictory. Perhaps this lack of strong empirical evidence occurs because different levels of social integration are mixed together. As represented in Figure 2.1, gender differences in reactivity will be looked at through diverse conceptualizations of integration.

### *The School*

Social integration at the institutional level is focused less on relationships than how people fit into the normative context. A very important institutional context for the adolescent is the school (Goodman et al. 2003; Harris, Duncan, and Boisjoly 2002). A specific, informal normative structure for each school is produced by the characteristics, attitudes, and behaviors of students (Crosnoe and Muller 2004). Social integration is conceptualized at this level by how adolescents measure up to what is considered to be normal by the majority at the school. The degree to which students fit into their normative school environment has important implications for mental health outcomes

(e.g. McNeely, Nonnemaker, and Blum 2002; Simmons and Blyth 1987). Since studies have found that student perceptions of the school climate are associated with depressive symptoms (e.g. Roeser, Eccles, and Sameroff 1998) and that acceptance by classmates is a major concern for adolescents (Bukowski, Hoza, and Boivin 1993), greater levels of fit within the normative context of the high school can be expected to be associated with decreased depression.

Assuming a greater female reactivity to social integration at the institutional level would lead to a prediction that a better fit within the high school environment is more important for the depression levels of girls since they are socialized to focus more on relationships, develop a stronger sense of caring for others (Gilligan 1982; Marini 1988), and assess their popularity through social comparisons (Giordano 2003). However, the actual evidence for greater female reactivity is mixed and inconclusive (Newmann 1986; Umberson et al. 1996). Without assuming greater female reactivity, an equally logical prediction could be that a better fit within the school context is more important for the depression levels of males since a better fit would indicate an improvement in status by having a higher position in the hierarchy of the overall school. To determine the extent to which the association between gender and depression is moderated by levels of social integration into the high school normative context, I put forward and test the traditionally supported hypothesis.

*A better fit within the student's particular high school normative context will be associated with decreased depression, especially for girls.*

### *The Friendship Group*

Friendship dynamics can be analyzed, on one level, strictly through the interaction between two people and the quality of their relationship. However, focusing on the friendship group and interconnections among the individuals in the group highlights structural components that cannot be assessed at the individual level. A social network can generally be thought of as a group of individuals linked by their social ties, and a friendship group has been defined as a collection of individuals who spend time with each other and develop close relationships (Hartup 1993). Social integration at the friendship group level can thus be seen as concerning both relationships as well as position within the group. Therefore, social integration is conceptualized at the friendship group level as including both connections and position.

Because of the increasingly social orientations of adolescents, the friendship group becomes more important. Integration into a friendship group has several implications for adolescent depression. Past findings illustrate that there is an association between greater numbers of friends and better mental health outcomes even in childhood (Gest, Graham-Bermann, and Hartup 2001). Also, students who are liked by their friends are also perceived as less worried and unhappy (Ostberg 2003), whereas students nominated as being part of the leading crowd have higher self-esteem (Coleman 1961).

Gender differences in the expression of intimacy in friendship have been identified. Female relationships tend to be closer than those of boys (Collins and Laursen 1999), with adolescent girls expressing greater interest in their close friends, greater concern about their friends' faithfulness, and greater anxiety about rejection (Berndt 1982; Kuttler, LaGreca, and Prinstein 1999). Assuming greater female reactivity at the

group level, increased social integration into the friendship group would be expected to be more important for the depression levels of girls since they rely on connections in order to gain social worth through popularity. But again, increased social integration into the friendship group could be more important for boys' depression since greater friendship group integration means higher rank in the hierarchy –a more powerful position– and increased group status. To examine the extent to which the association between gender and depression is moderated by levels of social integration into a friendship network, I set forth and test the traditionally supported hypothesis.

*Greater integration into the friendship group will be associated with decreased depression, especially for girls.*

#### *Romantic Relationships*

At the personal level, social integration can be thought of as a romantic relationship between two people. Since intimate relationships with opposite-sex partners become more important than intimacy with same-sex friends (e.g. Adams, Laursen, and Wilder 2001; Sullivan 1953), romantic involvement with a boyfriend or girlfriend becomes particularly relevant. Because involvement in a romantic relationship can be seen as including aspects of a personal bond between two people as well as concerns for social status, social integration at this level is conceptualized through connections and status position.

Developmentally, romantic relationships are important during adolescence. However, since many adolescent romantic relationships are superficial, fleeting, and motivated by concerns for social status and popularity (Brown 1999, 310), romantic involvement can have implications for adolescent depression. Teen romantic

relationships are associated with both positive and negative emotions (Larson, Clore, and Wood 1999; Seiffae-Krenke 1995), but studies have generally found that adolescent romantic involvement is associated with increased depression (Davila et al. 2004; Joyner and Udry 2000). Whereas increases in social integration at the school and friendship levels are predicted to be beneficial for adolescent mental health, involvement in romantic relationships is expected to be associated with increased depression.

Gender differences in the association between romantic relationships and depression can be expected, since in many ways, relationships are very different for girls and boys. An inherent contradiction exists in many teen romantic relationships since boys will gain status by having sex with a romantic partner (Anderson 1990) whereas girls must delay intercourse in order to maintain their reputations (Schlossman and Cairns 1993). Also, self disclosure is a very important means for establishing intimacy for girls (Camarena, Sangiani, and Petersen 1990). But a boy may be reluctant to discuss personal feelings, especially if he does not want to appear weak out of concern for power and dominance (Feiring 1999, 222). Assuming greater female reactivity at the personal level, these problems encountered in romantic relationships will be associated with increased female depression.

Conversely, involvement in an adolescent romantic relationship has been found to protect against social anxiety (La Greca and Harrison 2005). This suggests that involvement in a romantic relationship can contribute to increased status and the preservation of membership in a peer group (Connolly et al. 1999; Levesque 1993) for boys. Since boys are concerned with status and position within the group, an alternative prediction could be that involvement in a romantic relationship will be associated with

decreased depression for boys. In order to examine the extent to which the association between gender and depression is moderated by levels of involvement in a romantic relationship, the traditionally supported hypothesis is put forward.

*Greater involvement in a romantic relationship will be associated with increased depression for girls.*

#### *Gender Specific Mechanisms*

Quantitative analyses can only indicate associations between aspects of social integration at the three distinct levels and gender differences in depression without necessarily explaining why they exist. A thorough explanation for gender differences in depression must examine the specific mechanisms through which social integration is associated with depression. The conceptual model developed in this chapter holds that an appropriate level of social integration provides the social contact and positive interactions associated with increased self esteem and self worth. This increased sense of self worth, in turn, benefits mental health. However, the ways that boys and girls conceptualize and assess their respective self worth are influenced by early differences in socialization and the specific interaction styles learned in same-sex friendship groups.

Social feedback and social comparison are identified by the conceptual model as the gender-specific social and psychological mechanisms through which aspects of social integration are associated with depression. These mechanisms can be thought of as how individuals self-evaluate their social integration and social worth within the larger group (Pomerantz, Saxon, and Kenney 2001). However, the choice of mechanisms can be greatly influenced by the specific conception of social worth and the types of standards available for self-assessment. Because girls are more likely to conceptualize their social

worth through popularity, they tend to utilize social comparisons when evaluating themselves (Giordano 2003; Martin 1996). Conversely, boys are more likely to use social feedback (e.g. Herrald and Lucker 1995; Pomerantz, Saxon, and Kenney 2001) to assess their status. To test the basic assumptions of the conceptual model, I put forward the following hypothesis:

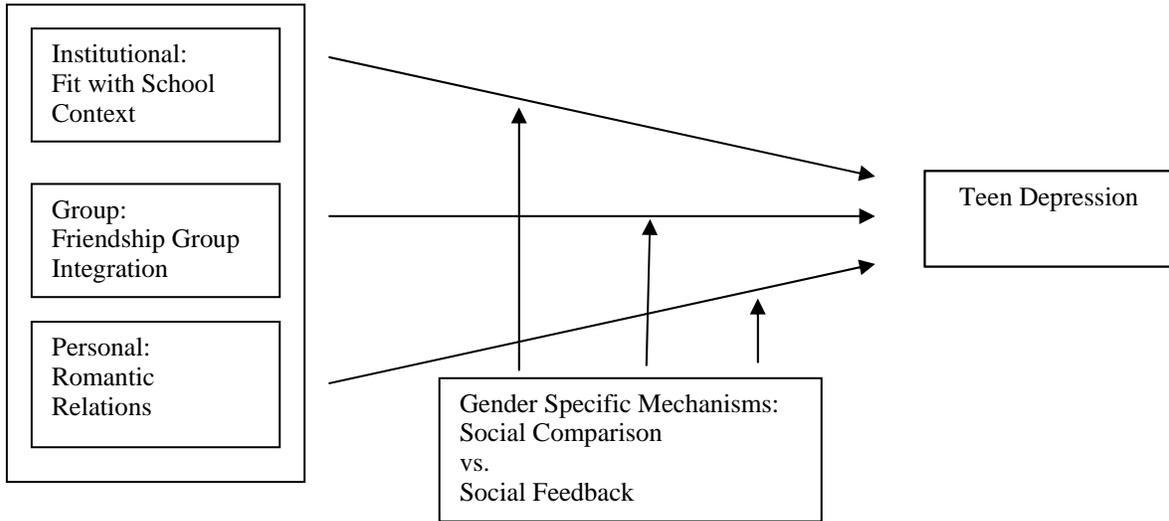
*Social comparison will be the main mechanism through which social integration is associated with depression for girls whereas social feedback will be the main mechanism for boys.*

## **Conclusion**

Each of the hypotheses put forth in this chapter addresses a specific aspect of the conceptual model represented in Figure 2.1. In short, the conceptual model holds that social integration serves as a moderator with girls being more reactive to social integration since they are socialized to maintain relationships and are more likely to use social comparisons when assessing themselves. Social feedback and social comparison are conceptualized as the gender specific mechanisms through which social integration is associated with depression. The validity of each hypothesis will be tested in the following chapters to determine if the traditional assumption about girls holds at each of the three levels of social integration, or whether, alternatively, this assumption actually masks greater reactivity for boys. Additionally, the gender-specific nature of social comparison and social feedback will be investigated to ascertain if depressive symptoms result from a psychological evaluation of not being socially integrated or by the social feedback received by others.

Figure 2.1: Basic Conceptual Model

Levels of Social Integration



## **Chapter 3: Data and Methods**

This chapter serves three functions. First, I describe the data sources, Add Health and the Identity and Social Relations Project, used for all upcoming analyses. Second, coding for both the dependent and independent variables are explained. And third, a brief overview is provided of all the statistical methods used in the following chapters.

### **National Longitudinal Study of Adolescent Health (Add Health)**

Add Health (Udry 1998) is nationally representative, consists of 3 waves of data, and was designed to study the health-related behaviors of teens in grades 7 through 12 during their development into adulthood. Extensive information was collected about the respondents' friends, families, schools, and neighborhoods to study the importance of social contexts in shaping the health and health-related behaviors of teens. The study was initiated under a grant from the National Institute of Child Health and Human Development (NICHD) and co-funded by 17 other federal agencies (Harris et al. 2003).

A school-based, clustered sampling design was utilized to screen for respondents of interest and to ensure representation of the respondents' friends. Prior to sampling, 26,666 schools were sorted by size, type, region, urbanization, and racial composition. Schools were eligible to be selected if they included an eleventh grade and enrolled more than 30 students. Of the original 80 schools selected into the sample, 52 agreed to participate. The other 28 were replaced with another school found to be similar with regards to size, type, level of urbanization, census region, census division, grade span, and racial composition (Harris et al. 2003).

Each high school was asked to identify junior high or middle schools that were expected to send at least 5 students to the high school. One feeder school was selected for each high school to be included in the study with the feeder school's probability of selection proportional to the number of students it sent to the high school. Four schools had no eligible feeder and 20 high schools acted as their own feeder since they included 7<sup>th</sup> or 8<sup>th</sup> grades (Harris et al. 2003).

Wave I, Stage 1 consisted of 90,118 students in 145 middle, junior high, and high schools completing the self-administered in-school survey. With the exception of students who were absent on the day the surveys were completed, these surveys provided a census of the school. The in-school surveys collected information about the student's and their parent's demographics, the student's friends, school work, school activities, general health and health related activities (Harris et al. 2003).

All students listed on the school roster were eligible for selection into the core in-home sample. Wave I, Stage 2 consisted of drawing a sample of 27,000 students for the in-home survey based on establishing a core sample from each community and special over samples for genetic pairs, disabled students, and certain racial / ethnic groups. Of these 27,000 selected, a core sample was drawn from 12 student-level strata (N = 12,105). In-home interviews were conducted by trained interviewers and lasted for 1 to 2 hours. The interviews covered topics such as health status, peer networks, and history of romantic relationships. Sensitive or potentially embarrassing questions were pre-recorded and participants used headphones to listen to them while they entered their responses using laptop computers (Harris et al. 2003).

Additional information on topics such as neighborhood characteristics, household characteristics, and income was also collected from questionnaires sent home and completed by a parent, who was usually the resident mother. Finally, school administrators provided information regarding characteristics of the school and student body, curriculum, and school services. Wave I data (N = 20,745) is comprised of the self administered in-school survey, the in-home interview, and additional data provided by parents and administrators. Wave I contains the core sample (N = 12,105) and over samples of African American teens from well-educated families, Chinese adolescents, Cuban and Puerto Rican teens, and physically disabled teens. Data collection occurred between September 1994 and April 1995. The Wave II follow up (N = 14,738) was conducted in April through September 1996 and elicited responses mainly from Wave I respondents who were not yet seniors. The majority of the 12<sup>th</sup> graders were excluded from the Wave II sample. Wave III (N = 15,197) was conducted between August 2001 and April 2002. It includes the data from in-home interviews with the original Wave I respondents and their romantic partners (Harris et al. 2003).

Add Health is one of the best data sets to use when studying contextual influences on adolescent depression. Add Health contains a slightly modified version of the Center for Epidemiologic Studies Depression Scale (CES-D) asked at multiple points in time, so previous incidence of depression can be controlled. Additionally, so much detailed information is gathered about the respondent's school and friends that numerous network variables can be constructed. Add Health also asks very thorough questions about romantic involvement.

## **Identity and Social Relations Project**

As a supplement to Dr. Crosnoe's NICHD funded project studying the process of social marginalization in high school with Add Health, in-depth interviews of 30 students enrolled in an Austin Independent School District high school were conducted. Students were between the ages of 14 to 18 and approximately half were female. The purpose of the interviews was to better understand how obesity, learning disability, and family poverty specifically affect adolescent social psychological functioning across different types of peer contexts.

Data collection took place through three different activities. Participants met with project staff for 30 minutes and completed a questionnaire that collected basic information about demographics, academic information, and recent depression. Students were given art supplies and a disposable camera in order to make a multimedia collage representing who they were, and asked if project staff could view the student's web page or blog. The final meeting entailed a series of open-ended questions in which students discussed their projects as well as discrepancies in their identity. Discussions about actual / ideal and actual / ought discrepancies elicited the potential outcomes of these discrepancies and the possible protective mechanisms that keep these feelings from disrupting educational goals. Overall, 30 students participated and 19 completed all phases of the project. All interviews were taped and professionally transcribed. The film from the respondents' cameras was developed at no expense to them and each participant received \$50 in compensation for their efforts. Appendix A contains the complete interview guide and questionnaire.

Interviews from the Identity and Social Relations Project provide a rare opportunity to extend and further explain the quantitative findings. The open ended format allows for a deeper exploration of responses through follow-up questions in a way that is not permitted by a survey. While none of the qualitative study participants were part of Add Health, their responses will help to clarify how social relationships affect teens in school.

### **Add Health Measures**

The dependent variable for all three of the sets of statistical analyses is a 19 question version of the CES-D included in the Add Health reported in Wave II. Respondents were asked how often during the last week (0 = never or rarely to 3 = most of the time or all of the time) they had feelings, thoughts, and physical conditions that indicate depression. The Add Health adaptation of the original 20 question CES-D omits two questions concerning crying spells and restless sleep, rewords two questions dealing with feeling like everything is an effort and not being able to get going, and adds a question about whether life is worth living (Perreira et al. 2005). Appendix B contains the complete list of questions. Values on the new index range from 0 to 57 with higher values indicating increased levels of depression. The alpha coefficient of the index is .87.

The original 20 question CES-D scale was designed to measure symptoms of depression in the general population. Higher scores indicated more depressive symptoms and were calculated by summing the affirmative answers to all of the items while reverse scoring the positive questions. A score at or above 16 (out of 60) was traditionally considered to be the cutoff score where a respondent would be considered depressed (Radloff 1991), but numerous other cutoffs have been suggested. Higher scores have

been proposed to indicate more severe cases of depression with 16 interpreted as moderate depression and 28 as severe depression (Radloff 1977).

As seen in Table 3.1, the average depression score at Wave II for the entire sample is 11.18. However, averages differ by gender with girls having higher scores. A t-test was performed to determine whether this gender difference is statistically significant. The t-value of -14.15 was significant at  $p < .0001$ , indicating that girls have higher levels of depression than boys in the sample.

### *Control Variables*

Numerous variables from Wave I are included in the analyses in order to control for their effects. Table 3.1 lists the appropriate descriptive statistics for the full sample and then separately for boys and girls. Demographic variables such as sex (1 = female, 0 = male) and age (in years) are considered. Race and ethnicity are measured with dichotomous variables indicating white, African American, Asian, Hispanic, and 'other' race. Student GPA is measured by averaging grades in English, math, history and science. Self rated general health measured from 1 = poor to 5 = excellent and physical development compared to others (with 1 = I look younger than most to 5 = I look older than most) are included as are dichotomous variables indicating if teens believe themselves to be underweight, overweight, or just the right weight. Family context variables account for the type of family in which the respondent lives (two-parent biological, step family, single family, or other family type) (e.g. Brown 2006; Sweeney 2007), and the level of education for the most highly educated parent (less than high school, high school, some college, college graduate, post-graduate). Past symptoms of depression are controlled with the respondent's CES-D score from Wave I. Self-esteem

is measured with a 6 item version of the Rosenberg esteem scale. Respondents were asked if they have a lot of good qualities, have a lot to be proud of, like themselves just the way they are, feel like they are doing everything just right, feel socially accepted, and feel loved and wanted. The questions were answered with strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree. Responses were coded so that strongly agree = 5, agree = 4, etc. then summed to create an index ranging from 6 to 30, with higher scores indicating higher self esteem. The alpha of the index is .85.

School level variables from the Add Health school information and school administrator data files are included in the analyses to control for their effects. Dichotomous variables indicate if the school is public or private. The number of students on the school roster is used to determine the size of the school. Any school with 600 or less students is coded as small, a school with 601-900 students is considered medium, and a school with more than 900 students is big (Lee and Smith 1997). Schools are also coded as suburban, urban, or rural. Additionally, dichotomous variables indicate the region of the country that the school is located: Midwest, West, South, or Northeast.

#### *School Context and Fit*

In order to assess the association between fit into the normative school context and adolescent depression, both individual and school level (macro) measures must be used. Variable selection was guided by findings from past research (presented in Chapter 4) as well as concerns about how individual students compare to the majority of others in their specific schools. Descriptive statistics for all the variables used in the school context and fit analyses are reported in Table 3.2 for the complete sample and then separately for boys and girls.

The individual level factors include dichotomous variables indicating if respondents play at least one sport and if they participate in at least one non-athletic school association or club. The number of friends nominated on the Wave I survey is utilized as well as a measure of friendship involvement. Level of involvement with friends is first calculated by summing the number of activities a respondent reports engaging in with each friend during the past week (going to their friend's house, meeting after school, spending time on the weekend, and talking on the telephone). The sum of activities is then divided by the number of reported friends to create a measure ranging from 0 to 4 (Cavanagh 2004). All of the individual level variables are from the in school surveys that were given to every student at each school.

These individual level factors are aggregated to create school level measures by averaging the responses. School level variables indicate the percentage of students in each racial / ethnic category, the percentage of students who participate in at least one sport, and rates of participation in at least one non-athletic school association or club (Crosnoe, Johnson, and Elder 2004). Additionally, aggregated GPA (the mean GPA of all students attending the school), average education level of the most highly educated parent, and mean friendship involvement score are calculated for each school.

I utilize both individual level and aggregated school variables to construct measures indicating how individual students fit into their particular school contexts. In order to assess how individual students match the predominant racial composition of the school, a variable is created to represent the percentage of the student's own race / ethnicity that is represented at each school (see Johnson, Crosnoe, and Elder 2001). For example, if white students are at a school that is 78% white, their values for the percent

same race variable will be 78. This measure of composition captures the fit between students and their school environment. Similar variables are also created for the percentage of students at each school with similar athletic participation, and the percentage of students with similar extracurricular activities participation.

Aggregated school level variables that have a mean score and standard deviation (GPA, parent's highest education level, and friendship involvement) are used to form a series of dichotomous measures of fit for each school. In short, students are divided into three groups using the mean and standard deviation: above school average, similar to school average, and below school average. For example, if the average GPA for a school is 2.5 with a standard deviation of 1, any student with a GPA above 3.0 ( $2.5 + (1 / 2)$ ) has a GPA above school average. Similarly, any student with a GPA below 2.0 ( $2.5 - (1 / 2)$ ) has a GPA below school average. Those students with a GPA between 2.0 and 3.0 will be considered as having GPAs similar to the school average. Using half a standard deviation above and below the mean effectively divides the students at each school into thirds so the dichotomous variables can be created. When possible, the individual responses reported on the Wave I data are used with the aggregated measures from the in school surveys. But because of data limitations, individual responses about athletic participation, extra curricular activities, and friendship involvement are from the in school data.

### *Friendship Group Integration*

Descriptive statistics for all the variables used in the friendship group integration analyses are reported in Table 3.3 for the complete sample and then separately for boys and girls. Relations with friends and integration into the friendship group are assessed in

two ways. First, respondents' ties to others in their social networks are measured using centrality. An adolescent who has ties to most of the individuals in the friendship group occupies a more central position (Haynie 2001). A respondent's Bonacich centrality, weighted by the centrality of others reporting ties to the respondent, is provided in the network data set of Add Health. Next, level of involvement with friends is measured with the same index used in the school context and fit analyses that counts the number of activities engaged in with each friend. For each nominated friend, respondents were asked if in the past seven days they had gone to their friend's house, hung out / went somewhere with their friend, talked on the phone, and spent time together on the weekend (Cavanagh 2004). Responses to the four questions (0 = no, 1 = yes) are summed and divided by the number of reported friends. This measure is then used to construct a series of four dichotomous variables. Students with a measure of 0 are categorized as having no involvement and are utilized as the reference category. The remaining respondents are divided into three roughly equal sized groups and categorized as having low (0.1-0.6), medium (0.7-1.3), and high (1.4+) involvement with friends.

Two individual-level variables are included in the Chapter 5 analyses to control for their effects. The number of nominations that respondents receive from other students at their schools indicates the size of their receive-network. Additionally, the number of friends that the respondent nominated on the Wave I survey is used to construct a series of four dichotomous variables. Students who nominated 0 friends are used as the reference category. The remaining respondents are divided into three roughly equal sized groups categorized by the number of friends they nominated: 1-6, 7-9, and 10 friends.

### *Romantic Relations*

Involvement in romantic relationships is measured using a series of dichotomous variables. Add Health asks if the respondent has had a special romantic relationship with any one in the last 18 months and then asks detailed questions about sexual activities (held hands, kissed, had sex, etc.) as well as the nature of the relationship (duration, if they said they loved each other, if they met the other's parents, etc.). In this study, a relationship is considered to be romantic if it is reported as such by the respondent or if it is reported as a 'non-relationship' in which the couple held hands, kissed, and stated that they loved each other.

Since being in a romantic relationship and having intercourse with a partner can be associated with depression (Joyner and Udry 2000), both aspects must be accounted for by the variables indicating relationship type. Using Crissey (2005) as a template, I created variables that indicate participation and sexual activity in the latest romantic relationship that occurred between Waves I and II. The reference category is no romantic relationship and no sexual intercourse. A category was also created to indicate teens who did not report participating in a romantic relationship, but who did have sexual intercourse between the waves. The remainder of the relationships occurring between Waves I and II either began and ended sometimes before the Wave II survey or are still ongoing at Wave II. The relationships in both of these categories are sub-classified as serious / sexual, non-serious / sexual, serious / non-sexual, and non-serious / non-sexual.

Relationships are considered to be serious if the couple stated that they loved each other, and a relationship is sexual if respondents report having sexual intercourse with their partners. Finally, the number of romantic relationships (and 'non-relationships')

meeting the criteria of romantic relationships) reported as ending between waves was included to assess “break-ups.” Descriptive statistics for all the variables in the romantic relationship analyses are reported in Table 3.4 for the complete sample and then separately for boys and girls.

### **Missing Data**

Missing data is an issue for all of the variables. In most situations, the case with the missing data is not used. In other situations, such as when indexes are created, only the available data is used to represent the index measure. For example, some of the respondents may not have been in all four of the courses used to construct the GPA variable. If a respondent only reports the grade for a single subject, that grade will represent GPA. If the grades for two subjects are reported, the mean of the two grades will be used as the GPA, etc.

### **Methods**

Three sets of quantitative analyses are performed in the following chapters. Each analysis addresses a specific component of social integration (school context, friendship group, and romantic relations). After each of the three quantitative analyses is conducted, I summarize the results and discuss the associations between all three levels of social integration and the depression levels of boys and girls. Then, in order to better understand adolescent social psychological functioning across different types of peer contexts, qualitative results from the Identity and Social Relations Project will be utilized to make better sense of the quantitative findings. Whereas a detailed description of each analysis will be presented in their respective chapters, the following presents a brief overview of the methods employed.

### *School Context and Fit Analysis*

Analyzing the association between school context and depression requires a multilevel model since depression will be predicted using variables measured at both the student (individual) and school (macro) levels with students nested within schools. The school variables previously discussed (school size, geographic region, urban status, etc.) and the individual control measures are used to predict depression in Chapter 4. Since the sampled students share a common environment of the same school, error terms (residuals or disturbances) will be correlated and observations could not be considered statistically independent. To correct for these design effects, I use SAS Proc Mixed.

Fit within the school environment is assessed using the measures of fit (the percentage of students in the school of the same race, percentage of students in the school with similar athletic participation, individual difference from average school GPA, etc.). Cross level interaction terms (gender x each fit index) are included. If an interaction term is significant, the slopes for boys and girls are assumed to differ depending on the level of fit within the school context (Singer 1998). Significant interaction effects are interpreted with multiple equations for each regression to observe differences in depression.

### *Friendship Group Integration Analysis*

The second analysis (in Chapter 5) uses the friendship variables, centrality and level of involvement with friends, with the individual control variables to predict depression. Since the value of depression (measured at the interval level with the CES-D scale) is predicted using a set of dichotomous and interval variables, multiple regression is utilized. Multiple regression allows for the estimation of how friendship group variables affect depression while controlling for the other factors.

However, Add Health data were collected in cluster samples in which the clusters were chosen with unequal probability and observations are not independent and identically distributed (Chantala and Tabor 1999). This design effect and unequal probability of selection must be corrected by using statistical programs capable of analyzing complex surveys to ensure nationally representative results and unbiased estimates. I conduct analyses in SAS using proc surveyreg and weight by the strata (region), cluster (psuscid2 –the school), and sampling weight (gswgt1). After running the full model, a second model is specified with interaction terms (gender x each friendship group variable) to observe different associations for boys and girls.

#### *Romantic Relations Analysis*

The romantic relationship variables (no relationship, ongoing serious / sexual, ongoing non-serious / sexual, ongoing serious / non-sexual, etc.) and the individual control variables are used to predict depression in Chapter 6. Similar to the friendship group analysis, multiple regression is used while correcting for design effects in SAS with Proc surveyreg. After the relationship variables are added to the basic model, a separate model includes interaction terms (sex x each romantic relationship variable) to observe different associations for boys and girls. For all of the analyses in Chapter 6, only the respondents who were not involved in an ongoing romantic relationship during Wave I were selected in order to control for aspects existing prior to the formation of the romantic relationship.

#### *Interview Analysis*

The main objective of using the interview data is to better understand and further explain the quantitative findings. Of particular interest is if depressive symptoms result

from a psychological evaluation of not being socially integrated or by the social feedback received from others. Therefore, analysis of the transcripts is guided by the relevant themes, categories, and unanswered questions derived from a summary of the quantitative results. This is very similar to using a grounded theory approach.

Whereas data collection and transcription of the Identity and Social Relations Project interviews are funded by Dr. Crosnoe's NICHD grant, the qualitative data still must be analyzed using a well managed iterative system to organize, summarize, and categorize findings (Dewalt and Dewalt 2002). Computer programs such as Nudist and Qualrus are available, but the relatively small number of participants and limited scope of inquiry permit the use of more commonly available programs. The interviews were originally transcribed in a Microsoft Word file. The text was converted into a table in which each uninterrupted section of the interview from the interviewer or participant was contained within separate cells. The cells were then copied and pasted into Microsoft Excel. Each row was numbered and each relevant section of the interview was coded in a separate column. Using basic Excel functions, the data could be sorted by the codes for analysis and then re-sorted by row number back into the original order (La Pelle 2004). Of most interest are the responses to questions involving the actual versus ideal identity of the students who indicate high levels of depression on their student questionnaire, but all responses will be reviewed thoroughly for discussions of how social integration affects ideas of self. When the qualitative data is incorporated into the discussion, the data from the indexed sections are reviewed, reduced, and interpreted.

Table 3.1: Descriptive Statistics for Control Variables Used in All Analyses

	Min / Max	Full Sample		Boys		Girls	
		Mean	(SD)	Mean	(SD)	Mean	(SD)
<i>Personal Characteristics</i>							
Female	0 / 1	.51	(.50)	—	—	—	—
Age (in Years)	11 / 21	15.82	(1.57)	15.91	(1.58)	15.74	(1.57)
<i>Race / Ethnicity</i>							
Non-Hispanic White	0 / 1	.52	(.50)	.52	(.50)	.52	(.50)
Non-Hispanic Black	0 / 1	.21	(.41)	.20	(.40)	.22	(.42)
Non-Hispanic Asian	0 / 1	.07	(.25)	.08	(.26)	.07	(.25)
Hispanic	0 / 1	.17	(.38)	.17	(.38)	.17	(.37)
Other Race	0 / 1	.03	(.16)	.03	(.17)	.03	(.16)
GPA	1 / 4	2.77	(.77)	2.66	(.78)	2.88	(.76)
General Health	1 / 5	3.88	(.91)	3.96	(.89)	3.80	(.92)
Self Esteem	1 / 5	4.11	(.60)	4.19	(.56)	4.03	(.62)
<i>Physical Development</i>							
Looks Younger	0 / 1	.21	(.41)	.22	(.42)	.19	(.40)
Looks about Average	0 / 1	.39	(.49)	.39	(.49)	.39	(.49)
Looks Older	0 / 1	.39	(.49)	.37	(.48)	.41	(.49)
<i>Body Image</i>							
Underweight	0 / 1	.17	(.38)	.22	(.42)	.12	(.32)
Average weight	0 / 1	.52	(.50)	.55	(.50)	.48	(.50)
Overweight	0 / 1	.31	(.46)	.23	(.42)	.40	(.49)
<i>Family Characteristics</i>							
<i>Household Type</i>							
Biological 2 Person Family	0 / 1	.65	(.48)	.67	(.47)	.64	(.48)
Single Family	0 / 1	.24	(.43)	.24	(.42)	.25	(.43)
Step Family	0 / 1	.05	(.22)	.05	(.22)	.05	(.23)
Other Family	0 / 1	.05	(.22)	.05	(.21)	.05	(.23)
Parent's Highest Education	1 / 5	2.94	(1.25)	2.98	(1.24)	2.90	(1.25)
n		13,491		6,571		6,920	

Notes: Analyses were conducted with unweighted variables. Cases missing a Wave I weight were excluded.

Table 3.1 (Continued): Descriptive Statistics for Control Variables Used in All Analyses

	Min / Max	Full Sample		Boys		Girls	
		Mean	(SD)	Mean	(SD)	Mean	(SD)
<i>School-Level Controls</i>							
Midwest	0 / 1	.24	(.43)	.24	(.42)	.24	(.43)
West	0 / 1	.22	(.41)	.22	(.41)	.22	(.41)
South	0 / 1	.39	(.49)	.38	(.49)	.39	(.49)
Northeast	0 / 1	.16	(.36)	.16	(.37)	.15	(.36)
Suburban	0 / 1	.53	(.50)	.54	(.50)	.53	(.50)
Urban	0 / 1	.28	(.45)	.27	(.45)	.29	(.45)
Rural	0 / 1	.19	(.39)	.19	(.39)	.18	(.39)
Big School	0 / 1	.49	(.50)	.50	(.50)	.48	(.50)
Medium School	0 / 1	.22	(.41)	.22	(.41)	.21	(.41)
Small School	0 / 1	.29	(.46)	.28	(.45)	.30	(.46)
Public School	0 / 1	.92	(.27)	.92	(.27)	.92	(.27)
Private School	0 / 1	.08	(.27)	.08	(.27)	.08	(.27)
<i>Depression</i>							
Wave 1	0 / 57	11.27	(7.55)	10.29	(6.69)	12.21	(8.17)
Wave 2	0 / 57	11.18	(7.56)	10.25	(6.81)	12.05	(8.12)
n		13,491		6,571		6,920	

Notes: Analyses were conducted with unweighted variables. Cases missing a Wave I weight were excluded.

**Table 3.2: Descriptive Statistics for Chapter 4 Analyses (Depression and School Context)**

	Min / Max	Full Sample		Boys		Girls	
		Mean	(SD)	Mean	(SD)	Mean	(SD)
<i>Individual-Level Factors</i>							
Athletic Status	0 / 1	.55	(.50)	.63	(.48)	.48	(.50)
Extra-Curricular Status	0 / 1	.56	(.56)	.42	(.49)	.68	(.47)
Number of Friends Nominated	1 / 10	7.64	(2.71)	7.29	(2.84)	7.92	(2.55)
Friendship Involvement	0 / 4	.97	(.77)	.89	(.80)	1.04	(.74)
<i>Measures of Fit</i>							
% Same Race	0 / 95	57.38	(28.99)	57.71	(29.24)	57.08	(28.76)
Parent's Ed. Above School Avg.	0 / 1	.32	(.47)	.34	(.47)	.30	(.46)
Parent's Ed. Similar to School Avg.	0 / 1	.28	(.45)	.27	(.45)	.28	(.45)
Parent's Ed. Below School Avg.	0 / 1	.40	(.49)	.38	(.49)	.42	(.49)
GPA Above School Avg.	0 / 1	.34	(.47)	.28	(.45)	.39	(.49)
GPA Similar to School Avg.	0 / 1	.35	(.47)	.36	(.48)	.35	(.48)
GPA Below School Avg.	0 / 1	.31	(.46)	.37	(.48)	.26	(.44)
% Same Athletic Status	5 / 97	54.35	(13.63)	54.10	(13.50)	54.58	(13.75)
% Same Extracurricular Status	14 / 86	52.95	(11.72)	51.87	(11.81)	53.94	(11.55)
Friend Inv. Above School Avg.	0 / 1	.29	(.46)	.26	(.44)	.32	(.47)
Friend Inv. Similar to School Avg.	0 / 1	.37	(.48)	.34	(.47)	.39	(.49)
Friend Inv. Below School Avg.	0 / 1	.34	(.48)	.41	(.49)	.29	(.45)
n		10,095		4,813		5,282	

Notes: Analyses were conducted with unweighted variables.

**Table 3.3: Descriptive Statistics for Chapter 5 (Depression and the Friendship Group)**

	Min / Max	Full Sample		Boys		Girls	
		Mean	(SD)	Mean	(SD)	Mean	(SD)
<i>Individual-Level Factors</i>							
Number of Nominations Received	0 / 30	4.49	(3.69)	4.23	(3.78)	4.73	(3.6)
No Friends Nominated	0 / 1	.10	(.30)	.14	(.35)	.06	(.24)
1-6 Friends Nominated	0 / 1	.29	(.46)	.33	(.47)	.26	(.44)
7-9 Friends Nominated	0 / 1	.22	(.42)	.20	(.40)	.25	(.43)
10 Friends Nominated	0 / 1	.39	(.49)	.33	(.47)	.43	(.50)
<i>Friendship Integration Measures</i>							
Friendship Group Centrality	.65 / 4.3	.82	(.65)	.77	(.67)	.87	(.62)
No Friendship Involvement	0 / 1	.13	(.34)	.19	(.39)	.09	(.28)
Low Friendship Involvement	0 / 1	.26	(.44)	.27	(.44)	.25	(.43)
Medium Friendship Involvement	0 / 1	.32	(.47)	.29	(.45)	.36	(.48)
High Friendship Involvement	0 / 1	.29	(.45)	.26	(.44)	.31	(.46)
n		9,593		4,588		5,005	

Notes: Analyses were conducted with unweighted variables.

Table 3.4: Descriptive Statistics for Chapter 6 Analyses (Depression and Romance)

	Min / Max	Full Sample		Boys		Girls	
		Mean	(SD)	Mean	(SD)	Mean	(SD)
<i>Personal Characteristics</i>							
Number of Friends Nominated	0 / 10	6.57	(3.50)	6.02	(3.67)	7.15	(3.21)
Friendship Involvement	0 / 4	.87	(.74)	.81	(.75)	.93	(.71)
<i>Relationship Variables</i>							
Type of Relationship							
No Romantic Relationships, No Sex	0 / 1	.53	(.50)	.53	(.50)	.52	(.50)
No Romantic Rels, but had Sex	0 / 1	.04	(.20)	.06	(.24)	.02	(.15)
(Last Relationship between Waves) <sup>A</sup>							
Serious, Sexual	0 / 1	.02	(.15)	.03	(.16)	.02	(.14)
Non-Serious, Sexual	0 / 1	.01	(.11)	.01	(.11)	.01	(.11)
Serious, Non-Sexual	0 / 1	.06	(.23)	.06	(.23)	.06	(.23)
Non-Serious, Non-Sexual	0 / 1	.06	(.24)	.06	(.24)	.06	(.25)
(Ongoing Relationship at Wave II)							
Serious, Sexual	0 / 1	.06	(.24)	.05	(.22)	.07	(.25)
Non-Serious, Sexual	0 / 1	.01	(.11)	.01	(.11)	.01	(.11)
Serious, Non-Sexual	0 / 1	.14	(.34)	.12	(.33)	.15	(.36)
Non-Serious, Non-Sexual	0 / 1	.07	(.26)	.07	(.26)	.08	(.26)
Romantic Break-ups between Waves	0 / 4	.31	(.60)	.29	(.59)	.32	(.61)
n		6,695		3,427		3,268	

Notes: <sup>A</sup> Indicates most recent relationship that ended before the Wave 2 survey. Cases missing a Wave I weight were excluded. Cases are included only if not in an ongoing relationship at Wave 1. Analyses were conducted with unweighted variables.

## **Chapter 4: Social Integration within the School**

### **Introduction**

Social and behavioral research on social integration within the school has focused mainly on academic achievement. Nonetheless, findings suggest that social integration within the normative school context also has important implications for other adolescent outcomes including mental health (McNeely, Nonnemaker, and Blum 2002; Resnick et al. 1997; Simmons and Blyth 1987). In general, a sense of belonging in school is associated with better psychological adjustment (Osterman 2000), and student perception of the school climate is associated with fewer depressive symptoms (Roeser, Eccles, and Sameroff 1998). However, evidence also suggests that the association between the level of fit within the normative context of the school and psychological outcomes may not be the same for boys and girls (Cyranowski et al. 2000; Garnefski and Okma 1996; Kuperminc et al. 1997; Nolen-Hoeksema 2001). This variability might contribute to gender differences in depression during adolescence.

This study adds to the literature regarding the social contextual influences of the school on adolescent mental health by determining the extent to which the association between gender and depression is moderated by levels of social integration into the high school context. In doing so, I specifically pinpoint social integration on the institutional level. Utilizing an adolescent specific approach and assuming that boys and girls have different reactions to social integration (social integration as moderator), I expect that a better fit within the school context will be associated with decreased depression, especially for girls. To test this basic hypothesis, I will use data from Add Health: a

study that contains extensive information about the individual characteristics of teens as well as their school contexts. Multilevel modeling will estimate CES-D depression as a function of fit into the normative context of the school, and then determine whether this link differs by gender. Results will gauge the degree to which differences in adolescent depression are shaped by the larger institutional context, which is useful from a theoretical level to test the assumption of greater female reactivity at the institutional level and from a practical level to better understand the association between fit within the normative context of the school and depression for girls and boys.

### **The Normative Context of the School**

A strong tradition of studying the association between context and a variety of health-related outcomes exists in the sociological and psychological literatures. The neighborhood is usually considered the most relevant context since adults have been most often chosen for study. However, the school is a more salient environment for teens (Anderman 2002; Goodman et al. 2003; McNeely, Nonnemaker, and Blum 2002).

The school serves as an important context for adolescents (Coleman 1961; Guest and Schneider 2003) for several reasons. Schools are formal institutional contexts responsible for exercising the necessary control through numerous administrative rules in order to provide instruction (Meyer et al. 1990). However, students also have ample opportunities to interact and socialize with their friends in both academic and recreational activities. The school, therefore, provides the context in which the same- and cross-sex peer relationships that move to center-stage in adolescence tend to take place (Feld 1981; Harris, Duncan, and Boisjoly 2002; Sullivan 1953). So much social contact is centered on the school context during adolescence that the school actually serves as the heart of

youth culture (Eder, Evans, and Parker 1995; Kinney 1999; Steinberg, Brown, and Dornbusch 1996).

Students interact with each other, their teachers, and the school administrators within this school context. The nature of these aggregated interactions helps to determine a general atmosphere, or climate, for the school (Crosnoe, Johnson, and Elder 2004). The particular, overall climate at a school influences what teens consider to be socially acceptable attitudes, expectations, and behaviors (Harris, Duncan, and Boisjoly 2002) and creates an informal normative structure (Crosnoe and Muller 2004) and culture for each school. If students' individual characteristics do not align with the collective norms of the school, they do not fit into the normative context and are less socially integrated at the institutional level. Social integration can thus be conceptualized by how well an adolescent measures up to what is considered to be normal by the majority at the school. Using this conceptualization, social integration at the institutional level focuses less on relationships than how people fit into the normative context.

The degree to which students fit within their normative school environment has important implications for mental health outcomes (e.g. McNeely, Nonnemaker, and Blum 2002; Simmons and Blyth 1987). Student perceptions of the school climate are associated with depressive symptoms (e.g. Roeser, Eccles, and Sameroff 1998). A perceived sense of belonging is associated with better psychological adjustment (Osterman 2000). Moreover, acceptance by classmates is a major concern for adolescents (Bukowski, Hoza, and Boivin 1993). Greater levels of fit within the school normative context are therefore expected to be associated with decreased depression.

However, this association between the degree of fit within the normative context and psychological outcomes may not necessarily be the same for boys and girls. For example, problems with teachers and negative feelings about school are more important predictors of behavioral problems for boys (Garnefski and Okma 1996). Some evidence suggests that boys' school climate perceptions have been found to explain both externalizing and internalizing problems, but girls' perceptions only explain externalizing problems (Kuperminc et al. 1997).

### **School Climate vs. Sense of Belonging**

Before the existing literature on this topic can be reviewed, the numerous terms that describe student relationships with the school need to be explained. As discussed above, school climate is conceptualized as the general atmosphere of the school responsible for the formation of the informal normative context. Both the school atmosphere and normative context can be thought of as social structural because they refer to cultural elements of the entire school. Therefore, social integration at the institutional level can also be considered more of a structural measure since it is the degree to which individual characteristics align with the collective norms of the school.

Social integration within the school can also be measured in different ways. Past research has used adolescent perceptions of belonging, connection, and acceptance. New research (Crosnoe and Muller 2004) takes a more objective approach by comparing the students and the school on various characteristics, both demographic and behavioral. Whereas all students who do not look or behave like the others in the school will be socially detached, they do have much higher odds.

## **Review of the Literature**

Research on school-level differences during adolescence has often focused on academic achievement and behavioral issues such as truancy and drug use instead of psychological outcomes (Roeser 1998). There is also a dearth of studies looking at psychological outcomes and school enrollment. These few studies, however, have illustrated the importance of fit within the normative context of the school for psychological well being.

### *Importance of Fit within the Normative Context of the School*

A readily apparent indicator of being ‘normal’ is a teen’s appearance. During adolescence, teens enter puberty at different times and mature at different rates. Appearing older than most of the other students at the school has been found to be associated with emotional distress and suicidal thoughts (Resnick et al. 1997). Findings also indicate that the outcomes associated with early maturation can be more severe for girls than boys. Early maturing girls in coeducational school settings have been shown to be at the greatest risk for delinquency (Caspi et al 1993). Additionally, girls who matured earlier experienced more self image problems especially if they transitioned from elementary school to a junior high because of greater social and sexual pressures exerted by older boys in the new school context (Simmons and Blyth 1987).

Appearing older than other students is not the only appearance-related aspect of being considered to be normal. American society generally stigmatizes obesity, and the degree to which it is specifically stigmatized varies depending on an individual’s primary social context (Crosnoe and Muller 2004; Ross 1994). In schools with higher rates of romantic activity and lower average body size, the academic achievement of obese

adolescents has been found to suffer since the normative context is especially likely to stigmatize obesity (Crosnoe and Muller 2004).

Issues of fit within the normative context also have to do with how an individual student measures up to the prevalent beliefs or attitudes at the school. Increased aggregated school belonging is generally associated with a higher average GPA for the school. However, in schools with greater aggregated measures of belonging, students who feel that they do not belong experience more social rejection, difficulties getting along with other teachers and students, and trouble completing their homework (Anderman 2002). In schools with higher aggregated measures of supportive school climate and school connectedness, students with lower connectedness were more physically and relationally aggressive (Wilson 2004).

#### *School Characteristics, Sense of Belonging, and Connectedness*

Whereas research detailing the association between how individuals fit into the normative context of the school and their psychological outcomes is sparse, more studies are available focused on the importance of a sense of belonging and connection to the school for adolescents. Although this research is tangential to fit within the normative context of the school, studies looking at student perceptions of connectedness to the school are valuable in illustrating that the association between fit and psychological outcomes varies by different schools and suggesting the characteristics of the school that must be controlled in analyses. Generally, smaller schools have been shown to be associated with greater connectedness (Lee and Smith 1995; McNeely, Nonnemaker, and Blum 2002). Suburban schools are associated with a greater sense of belonging when compared to urban schools (Anderman 2002). Moreover, school connectedness is higher

in racially segregated schools and lowest in integrated schools (Johnson, Crosnoe, and Elder 2001; McNeely, Nonnemaker, and Blum 2002).

### **Theoretical Approach**

The general underlying assumption behind many of the studies reviewed is based on the importance of social integration and sense of belonging for *improved* psychological and academic outcomes. As discussed in Chapter 2, social integration has long been considered a key element of improved individual well-being and mental health outcomes (e.g. Durkheim [1865] 1966). But many studies looking specifically at social integration within the normative school context also rely upon the well-established idea that a sense of belonging is a fundamental psychological need that plays an important role in human motivation without going much further (Baumeister and Leary 1995; Deci et al. 1991). For adolescents in particular, a perceived sense of belonging is associated with better psychological adjustment, improved academic engagement, and higher achievement (Osterman 2000). The key theoretical question, then, is why? Over time, theories designed to answer this question have been developed.

Most of the studies focused on the alignment of individual characteristics with the school context rely on theoretical approaches drawn from Lewin's (1939) field theory and Bronfenbrenner's (1977) ecology of human development. These goodness of fit models generally hold that a successful developmental outcome depends on how well an individual's needs are supported by the environment (Graber and Brooks-Gunn 1996). However, the applicability of a specific model is determined largely by the unit of analysis and the particular aspect of the environment deemed to be important. Early goodness of fit models focused on a specific student's school achievement and academic

motivation (Eccles et al. 1993) after the transition to a new school. The applicability of the early models was expanded by the stage-environment fit model (Eccles et al. 1993) that emphasizes the needs of all individuals in a similar developmental stage and how classroom structure opposes these needs.

Even more recently, conceptions of goodness of fit have been broadened even more and their applicability has extended past their previous narrow focus to include ideas about how individuals fit into the normative context of their primary environments. Recent explanations of how the fit between individual characteristics and contextual norms affect functioning have utilized the concept of reflected self appraisal. Drawn from Cooley's looking glass self ([1902] 1983), reflected self appraisal contends that individual self concept is constructed through others' judgments and successful functioning depends on how well individual characteristics fit with collective norms of the primary context (Crosnoe and Muller 2004). Stigma is considered to be especially important since any trait that is evaluated more negatively by others will be an obstacle to successful functioning and could lead to social isolation (Link and Phelan 2001; Quinn and Crocker 1999).

Whereas the goodness of fit models discussed above provide a solid foundation to understand how individual outcomes are associated with fit within the school context, they do not specifically address gender differences in fit and depression. The conceptual model developed in Chapter 2 can be used to explain reasons for differences in the association between social integration and the depression levels of boys and girls. In short, I proposed that different early socialization experiences with parents, teachers, and same-sex friendship groups encourage boys to be physical and competitive whereas girls

are encouraged to be caring and cooperative. The different interaction styles learned in the segregated friendship groups are also associated with how boys and girls assess their self worth with boys gauging their status through feedback and girls assessing their popularity with social comparison. Social integration is conceptualized as a moderator with girls being more reactive to social integration since they utilize social evaluations when assessing themselves.

Assuming a greater female reactivity to social integration at the institutional level, social integration within the high school context would be more important for female depression since girls are socialized to maintain relationships and are more likely to assess their popularity through social comparisons (Giordano 2003; Martin 1996). Therefore, not fitting into the normative environment of the school and not being considered “normal” in the context of the school could expose a girl to more criticism and condemnation of her peers, leading to increased depression. Greater female reactivity has been the traditional assumption. To determine the extent to which the association between gender and depression is moderated by levels of social integration into the high school normative context, I put forward this traditional assumption as the main hypothesis.

*A better fit within the student’s particular high school normative context will be associated with decreased depression, especially for girls.*

However, a better fit also indicates improved status with a higher position in the hierarchy of the school for boys. An equally logical prediction, then, could be that a better fit within the school context is more important for boys’ depression. This chapter

will determine the validity of the traditional assumption about girls, or whether this assumption masks greater reactivity for boys at the institutional level.

## **Data and Method of Analysis**

### *Data and Measures*

Data for the analyses in this chapter are from Add Health (Udry 1998), described in Chapter 3. The dependent variable is a 19 question version of the CES-D included in the Add Health reported in Wave II. The individual and family-level control variables detailed in Table 3.1 along with the individual level factors, school level controls, and measures of fit within the normative school context presented in Table 3.2 are used to predict depression. The construction of all variables is discussed in detail in Chapter 3.

### *Method of Analysis*

The statistical models utilized in this chapter address the traditional hypothesis: a better fit within the student's particular high school normative context will be associated with decreased depression, especially for girls. Analyzing the association between school context and depression requires a multilevel model since depression is predicted using variables measured at both the student (individual) and school (macro) levels with students nested within schools. Since the sampled students share a common environment of the same school, error terms will be correlated and observations can not be considered statistically independent. Standard errors and test statistics will be biased (downward and upward, respectively) leading to conclusions that relationships between variables exist when they really do not (Allison 1999). To correct for these design effects, Proc Mixed is used in SAS.

This choice of method requires justification. As seen in Table 3.1, Wave II depression scores range from 0 to 57. The average score is 11 with a standard deviation of 7.56, suggesting that the scores more closely resemble a Poisson or negative binomial distribution instead of the normal distribution assumed by Proc Mixed. Additional analysis indicates that the distribution has a slight positive skew of 1.03 and is overdispersed since the variance, 57.37, exceeds the mean. To better fit this non-normal distribution, Proc Glimmix could be utilized; however, the data could not be weighted. In order to check the robustness of Proc Mixed, linear regression (svy: regress), Poisson (svy: poisson), and negative binomial regression (svy: nbreg) models were compared in Stata. After the data were weighted by the strata (region), primary sampling unit (the school), and sampling weight, results for all three were very similar and would lead to similar conclusions about the associations between the independent variables and depression. Because these models perform equally well, I assume that the skew of depression does not significantly affect the overall findings of a model that relies on a normal distribution, and Proc Mixed is chosen in order to weight the data.

Before the final models were run, an unconditional model was fit in order to calculate the intraclass correlation (Singer 1998). Results indicate that 4% of the variance is explained by differences between schools. Next, in order to see whether the main effects of the female variable on depression varies across schools, separate analyses were performed to test for a random slope. Two models were run in which one approximated a random slope for gender and the other did not. Comparing the -2 residual log likelihoods of each model yields  $58,790.1 - 58,785.8 = 4.3 / 2 \text{ d.f.}$ ,  $p < .05$  indicating that the main effect of female on depression varies significantly across schools in the

data. As a result, the female variable will be modeled as having a random slope in all of the analyses in this chapter.

Separate models containing only the control variables and each specific fit variable were run to test for statistical significance. Then, the corresponding interaction term was added to each respective model in addition to the fit variable. Finally, the full model was fit with all control variables, fit measures, and interaction terms. Because the statistical significance of the fit measures and interaction terms did not differ meaningfully between the individual and final models, only 3 models are presented. The baseline model containing only the control variables is offered first. Then, all fit measures are added in Model 2. Finally, all cross level interaction terms (gender x each fit measure) are added to the third model.

If an interaction term is significant, the slopes for boys and girls are assumed to differ depending on the level of fit within the school context (Singer 1998). Interaction effects are then interpreted by calculation of multiple equations for each regression to produce different predicted depression scores for boys and girls at different levels of student x school fit. First, an adjusted intercept will be derived by multiplying the coefficients for all variables in the equation by the respective variable's mean and then summing all of the values (omitting the effects of the interaction term and the main effects of both variables involved in the interaction). This adjusted intercept will be added to both the low and high effects of the interacting variables (for example, female and GPA above school average) to produce a predicted depression score for boys and girls at both levels of the fit variable.

## **Results**

### *Descriptive Analysis*

The descriptive statistics in Table 3.2 indicate that most of the means and proportions of the individual level factors are similar for boys and girls. However, higher proportions of boys play at least one sport whereas higher proportions of girls participate in at least one extracurricular activity. Girls also nominate a greater number of friends and report higher levels of friendship involvement whereas a greater proportion of boys have friendship involvement scores below the average of the school. Additionally, greater proportions of girls have a GPA above the school average or a GPA that is similar to the school average (within 1/2 standard deviation of the school mean) whereas greater proportions of boys have a GPA similar to the school average or a GPA that is below the school average.

### *Multivariate Analysis*

Table 4.1 presents the results from the three multilevel models predicting teen depression. Model 1 is a baseline model and only includes control variables. Results from Model 1 generally support previous findings in the literature and indicate that while controlling for the effects of the other variables, females have depression scores that are 1.06 points higher than males, on average. Each additional year of age is associated with a .14 point increase in depression. Asians and Hispanics have higher depression scores when compared to whites. Looking older than other students in the school is associated with a .45 point increase in depression whereas considering oneself to be overweight, reporting greater general health, more self esteem, and a higher GPA are associated with decreased depression scores. Respondents who nominate greater numbers of friends have

lower depression scores considering that each friend nominated is associated with a .11 point decrease in depression. However, for every point that the friendship involvement index increases, depression scores increase by .33 points. Family and school level controls indicate that living in a single family is associated with an increase of .47 points in depression compared to respondents living with 2 person biological families. Also, increased parental education is associated with decreases in depression. Finally, students in small schools average a .50 point increase in depression scores when compared to students in medium sized schools. This result is unusual considering that since smaller schools have been found to be associated with greater student connectedness (Lee and Smith 1995; McNeely, Nonnemaker, and Blum 2002), students in smaller schools would be predicted to have lower depression.

Model 2 includes the measures of fit. Controlling for the effects of the other variables in the model, students with a GPA above the school average have depression scores that are .44 points higher than other students at their school with a GPA similar to the school average. Students with a GPA below the average GPA at the school have depression scores that are .67 points lower than students at their school with a GPA similar to the school average. A greater percentage of students in the school with the same athletic status as the respondent increases depression scores by .01 points. Respondents with friendship involvement below the average level of friendship involvement at the school have depression scores that are .71 points higher than students at their school with friendship involvement similar to the school average. The other measures of fit addressing similarities in race, parent's education, and extracurricular activities are not statistically significant.

The final model, Model 3, includes cross level interaction terms for all of the fit measures. Interaction terms are statistically significant only for female x GPA above the average GPA of the school and female x friendship involvement above average friendship involvement at the school. To more clearly interpret these interaction effects, I calculate predicted depression scores with multiple equations using Model 3 for boys and girls to observe differences in depression. Using the procedure discussed above, boys with a GPA similar to the school average have a predicted depression score of 10.4 whereas boys with a GPA above school average have a depression score of 11.2. Girls with a GPA similar to the average GPA of the school have a predicted depression score of 10.9 and girls with a GPA above the school average have a slightly higher depression score of 11.1. These results are graphed in Figure 4.1 and illustrate that whereas both boys and girls with GPAs above the mean GPA of the school have greater depression scores when compared to boys and girls with GPAs similar to the school average, the difference is larger for boys. Given that the value for the GPA above the school average fit variable is positive whereas the interaction term (GPA above the school average x female) is negative, girls' depression is essentially not associated with having a GPA above the school average GPA.

Boys and girls with friendship involvement similar to the school average have predicted depression scores of 10.6 and 11.1, respectively. Friendship involvement above the average friendship involvement of the school is associated with a predicted depression score of 9.9 for boys and 11.3 for girls. These results are illustrated in Figure 4.2 and indicate that whereas girls' depression is higher overall, boys with friendship involvement greater than the school average have lower depression than boys with

friendship involvement similar to the school average. Having a friendship involvement score greater than the school average is associated with greater decreases in depression for boys. Considering that the value of the friendship involvement above the school average fit variable is negative whereas the interaction term (friendship involvement above the school average x female) is positive, girls' depression is not really associated with having friendship involvement greater than the school average. This is also supported by the finding that depression for girls increases by only 0.2 points.

### **Discussion**

Contrary to expectations, a better fit within the normative context of the school does not appear to be associated with greater decreases in depression for girls. A larger gap actually exists in the depression scores between boys who have GPAs and friendship involvement scores above the averages of the school and boys who have GPAs and friendship involvement scores similar to the school averages. Therefore, the main hypothesis is not supported. The traditional assumption of greater female vulnerability to a lack of integration appears to mask greater reactivity for boys at the institutional level.

An explanation of why boys seem to have greater reactivity to social integration at the institutional level is now needed. Without further qualitative analyses, any meaningful interpretation of the results is somewhat speculative since only associations between fit and depression can be identified by the analyses. However, the conceptual model presented in Chapter 2 points to the importance of status for boys. In short, increased social integration and dominance in the hierarchy signifies higher rank and greater social worth. As a boy's status increases, his depression can be predicted to decrease. The institutional level can be particularly relevant for boys since researchers

have proposed that the male quest for status in the hierarchy orients boys to social integration into larger contexts (Baumeister and Sommer 1997). Whereas girls focus more on connections with smaller groups of others, the relevant larger context for boys could very well be the school.

Considering that Table 3.2 illustrates a greater proportion of boys with GPAs below the average GPA of the school or similar to the school average, a boy with a GPA above the average GPA of the school is less likely to align with the gender-specific collective norms of the school. Earning a GPA that is greater than the average GPA at the school could mean that a boy is considered to be a 'nerd' by his peers, that he is less socially integrated, and that he loses status in the larger hierarchy of the school.

Conversely, the interaction term for female x GPA below school average is not statistically significant even though larger proportions of girls have GPAs above the school average or similar to the school average. This suggests that not measuring up to what is considered normal regarding GPA in the context of the school is less of an issue for the depression of girls.

Findings concerning how respondents compare with other students at their school in friendship involvement yield somewhat different conclusions. When measured at the individual level, greater involvement with friends is associated with increases in depression (as seen by the statistically significant coefficient in all three models). But for boys, not fitting into what is considered to be an average level of friendship involvement is actually a benefit since having a friendship involvement level greater than the average friendship involvement of other students at the school is associated with decreased depression. Turning to the conceptual model in Chapter 2, involvement with friends at

levels greater than the average friend involvement at the school could be indicative of higher status for boys. And again, friendship involvement above the average friendship involvement at the school-level does not meaningfully affect the depression of girls.

In short, boys like to spend time with their friends, but are less concerned with academic achievement. By relying on the conceptual model in Chapter 2, the importance of status is highlighted in explaining boy's greater reactivity to social integration at the institutional level. Fitting into what is considered normative for the school has status implications for boys that are not necessarily a concern for girls. This conclusion is consistent with the unique style of interaction learned in the male friendship group. Boys are more likely to separate themselves from adults and form close friendship groups to protect each other from adult regulation (Maccoby 1998, 53). If boys think of the classroom as the domain of adults ruled by adult policies, any boy who earns a higher GPA would not be 'cool' and his status would suffer.

The relevance of the specific school domains in which the students either do or do not fit is also important to consider since only some of the fit variables are significant. The variables that largely have to do with academic and social aspects (fit within average GPA, friend involvement, and athletic status levels) are more important than the other more demographic measures of racial similarity and parental education. An exception is the percentage of other students at the school with the same extracurricular participation rate. Perhaps fit within academic and social aspects of the school is more important for the status of students than how they match the demographic characteristics of the student body. However, the way in which students view themselves as fitting in or not fitting

into their schools could be very different from the measures utilized in these analyses. Further qualitative investigation is needed in this regard.

### **Implications for Theory**

Theoretical approaches can be greatly informed by considering gender-specific aspects of fit. Whereas fit into the normative context of the primary environment has implications for various outcomes (i.e. Crosnoe and Muller 2004; Eccles et al. 1993), the relevance of the specific context could differ for boys and girls. Boys could be more concerned about the normative context of the larger, institutional-level since they derive social worth through status whereas girls may focus on the more intimate, individual or group-level. Additionally, the meaningfulness of different measures of fit can differ for boys and girls. An important aspect of fit for boys (such as having a normative GPA) may not be important for girls. Theories can offer more robust explanations by accounting for these possible gender differences in relevant contexts and measures of fit.

Table 4.1: Results from the Multilevel Models Predicting Wave II Depression by Integration into the School Context

	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
<i>Individual-Level Controls</i>						
Female (F)	1.06***	(.15)	1.09***	(.15)	.48	(.89)
Age	.14**	(.05)	.13*	(.05)	.14**	(.05)
Non-Hispanic White‡						
Non-Hispanic Black	.23	(.22)	.24	(.24)	.23	(.24)
Non-Hispanic Asian	1.14**	(.37)	1.08**	(.40)	1.13**	(.40)
Hispanic	.56*	(.25)	.54†	(.28)	.56*	(.28)
Other Race	.70†	(.37)	.64	(.44)	.66	(.44)
Looks Older	.45**	(.14)	.45**	(.14)	.46**	(.14)
Looks about Average‡						
Looks Younger	.22	(.18)	.21	(.18)	.21	(.18)
Overweight	-.33*	(.15)	-.35*	(.15)	-.34*	(.15)
Average weight‡						
Underweight	-.21	(.19)	-.21	(.19)	-.21	(.19)
General Health	-.34***	(.08)	-.34***	(.08)	-.34***	(.08)
Self Esteem	-.98***	(.13)	-.99***	(.13)	-1.00***	(.13)
Wave 1 Depression	.51***	(.01)	.51***	(.01)	.51***	(.01)
GPA	-.66***	(.10)	-1.20***	(.21)	-1.18***	(.21)
<i>Individual-Level Factors</i>						
Athletic Status	.07	(.14)	-.03	(.15)	-.02	(.15)
Extra-Curricular Status	-.16	(.14)	-.05	(.15)	-.06	(.15)
Number of Friends Nominated	-.11***	(.03)	-.10***	(.03)	-.10***	(.03)
Friendship Involvement (Inv.)	.33***	(.10)	.72***	(.18)	.75***	(.19)

n = 8,467

\* p < .05; \*\* p < .01; \*\*\* p < .001; † p < .10

Notes: ‡ excluded as reference category. All models contain a random slope for gender.

Table 4.1 (Continued): Results from the Multilevel Models Predicting Wave II Depression by Integration into the School Context

	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
<i>Family Controls</i>						
Biological 2 Person Family‡						
Single Family	.47**	(.16)	.48**	(.16)	.50**	(.16)
Step Family	.32	(.28)	.34	(.28)	.36	(.28)
Other Family	.94*	(.39)	.92*	(.39)	.90*	(.39)
Parent's Highest Education (PHE)	-.22***	(.06)	-.15	(.14)	-.14	(.14)
<i>School-Level Controls</i>						
Midwest‡						
West	.24	(.31)	.31	(.33)	.30	(.33)
South	.33	(.24)	.35	(.26)	.34	(.25)
Northeast	.13	(.31)	.12	(.33)	.12	(.33)
Suburban‡						
Urban	-.12	(.23)	-.10	(.25)	-.07	(.25)
Rural	-.34	(.27)	-.33	(.29)	-.31	(.29)
Big School	.35	(.26)	.19	(.28)	.18	(.27)
Medium School‡						
Small School	.50*	(.25)	.45†	(.26)	.45†	(.26)
Public School‡						
Private School	.12	(.36)	-.008	(.39)	.001	(.39)
<i>Measures of Fit</i>						
% Same Race			-.001	(.004)	.002	(.005)
PHE Above School Avg.			.05	(.24)	.15	(.29)
PHE Similar to School Avg.‡						
PHE Below School Avg.			.22	(.23)	.41	(.28)
GPA Above School Avg.			.44*	(.22)	.80**	(.27)
GPA Similar to School Avg.‡						
GPA Below School Avg.			-.67**	(.24)	-.48†	(.29)

n = 8,467

\* p < .05; \*\* p < .01; \*\*\* p < .001; † p < .10

Notes: ‡ excluded as reference category. All models contain a random slope for gender.

Table 4.1 (Continued): Results from the Multilevel Models Predicting Wave II Depression by Integration into the School Context

	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
% Same Athletic Status			.01*	(.01)	.002	(.008)
% Same Extracurricular Status			-.01	(.01)	-.01	(.01)
Friend Inv. Above School Avg.			-.22	(.23)	-.78**	(.29)
Friend Inv. Similar to School Avg.‡						
Friend Inv. Below School Avg.			.71***	(.19)	.50*	(.25)
<i>Interactions</i>						
F x % Same Race					-.005	(.005)
F x PHE Above School Avg.					-.17	(.32)
F x PHE Below School Avg.					-.31	(.31)
F x GPA Above School Avg.					-.64*	(.30)
F x GPA Below School Avg.					-.35	(.32)
F x % Same Athletic Status					.02†	(.009)
F x % Same Extracur. Status					.001	(.01)
F x Friend Inv. Above School Avg.					.91**	(.30)
F x Friend Inv. Below School Avg.					.41	(.31)
Intercept	9.96***	(1.14)	10.77***	(1.41)	10.95***	(1.48)

n = 8,467

\* p < .05; \*\* p < .01; \*\*\* p < .001; † p < .10

Notes: ‡ excluded as reference category. All models contain a random slope for gender.

Figure 4.1: Interaction Effects for GPA Above and Similar to School Average

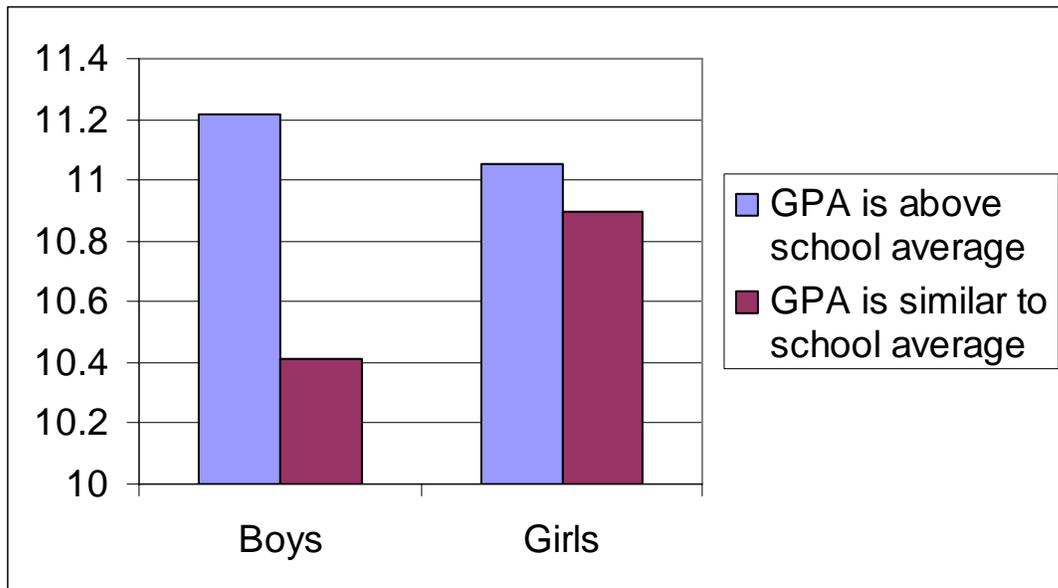
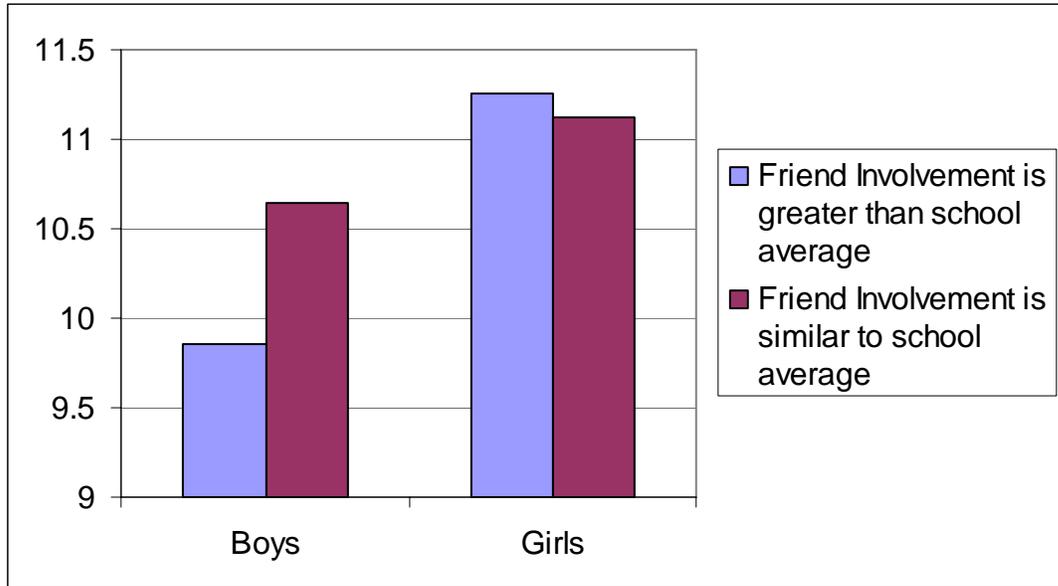


Figure 4.2: Interaction Effects for Friend Involvement Greater than and Similar to School Average



## **Chapter 5: Friendship Group Integration**

### **Introduction**

As adolescents become more socially oriented, their friendship groups increase in significance. At the same time, being with friends becomes the most important aspect of school life for most teens (Corsaro and Eder 1990). During this time, acceptance by friends is an important component of self-identity that can influence psychological adjustment (Harter 1997). In short, adolescents who have more friends (Field, Diego, and Sanders 2001) and engage in more frequent activities with their friends (Gest, Graham-Bermann, and Hartup 2001; Kandel and Davies 1982; Vernberg 1990) are less depressed. Conversely, being unpopular and experiencing rejection by friends during adolescence is associated with numerous negative outcomes including poor academic performance, dropping out of high school, and higher rates of delinquent behavior (Savin-Williams and Berndt 1990). However, differences in the friendships of boys and girls have been found that suggest girls have closer relationships with more emotional sharing and self disclosure (Savin-Williams and Berndt 1990). If relationships with friends differ for boys and girls, the association between depression and integration into the friendship group might also differ.

Relations with a friend are intensely personal and friendship dynamics can be analyzed, on one level, through the interaction between two people. Yet, adolescents normally have more than one friend and are more likely to socialize in a group (Brown 1990). Focusing on the friendship group: a collection of individuals who spend time with each other and develop close relationships (Hartup 1993), highlights structural

components that can not be assessed by studying friendship solely at the individual level. From a social network perspective, the structure of the friendship group, itself, can have consequences for individual members beyond the characteristics of the individual members of the group (Wasserman and Faust 1994). Social integration at the friendship group level can thus be seen as concerning both relationships with others as well as a position within the group.

I examine the extent to which the association between gender and depression is moderated by levels of social integration into the adolescent friendship group. Assuming that boys and girls have different reactions to social integration (social integration as a moderator), I expect that greater integration into the friendship group will be associated with decreased depression, especially for girls. To test this hypothesis, I will utilize Add Health social network data to create measures of centrality and involvement with friends and then examine their gendered association with depression.

This study contributes to the literature concerning the influence of social integration on adolescent mental health in two ways. First, an investigation of the association between an individual's position within the friendship group and depression informs and extends the social network perspective by emphasizing the importance of integration for mental health. Second, studying the extent to which the association between gender and depression is moderated by levels of social integration into a friendship network can help to better understand the gender differences in depression during adolescence.

## **Review of the Literature**

Adolescent friendship has been studied by two different lines of research. Sociologists are more likely to focus on structural aspects of the adolescent friendship group (Crosnoe 2000) and the negative influences of friends on behavior (e.g. Farrell and White 1998; Miller et al. 1997). As a result, the outcome of interest for many sociological studies has been delinquency (e.g. Haynie 2001; Warr 1993). But on the other hand, psychologists are more likely to focus on friendships as contexts for development and socialization (e.g. Sullivan 1953). Developmental studies, therefore, are more likely to stress the benefits of having close friends (Hartup and Stevens 1997; Savin-Williams and Berndt 1990) and the long-term consequences associated with a lack of friendship. Findings from both of these traditions are useful in understanding how aspects of integration into the friendship group are associated with adolescent mental health outcomes.

### *The Importance of Adolescent Friendships*

The nature of relationships with friends changes across the life course (e.g. Erikson 1968; Sullivan 1953). While specific explanations offered by different developmental theories are multifaceted, most detail how concerns about association and pro-social behavior in early play-oriented dyads grow into intimate relationships with emotional attachments and concern for other's well-being during adolescence (Steinberg 1993). By early adolescence, friendships are more companionate and complex (Hartup and Stevens 1997) with self-disclosure and loyalty considered as vital dimensions of the relationship (Shulman et al. 1997).

During adolescence, significantly more time is spent with friends as friendships become increasingly central (Brown 1990; Younis and Smollar 1985). Adolescents in high school spend 29% of their waking hours with friends (Larson and Bradney 1988) and twice as much of their time each week is spent with friends than parents (Brown 1990). Family relationships continue to be important, but friendships serve functions that are different from relations with the family. Friendships help adolescents to establish their own identities apart from their parents, gain autonomy from their families, and develop their own distinct worldviews (Crosnoe 2000; Giordano, Cernkovich, and Pugh 1986; Rubin, Bukowski, and Parker 1998). Compared to relationships with parents, adolescent interactions with friends are more reciprocal and are more likely to provide teens with a chance to engage in a more equal exchange of ideas and expression of alternative views (Hartup and Stevens 1997).

Whereas friends become more important for both boys and girls during adolescence, gender differences in numerous aspects of friendship have been found. Friendship among boys is characterized more by competitiveness and aggression (Windle 1994). Boys also emphasize shared instrumental activities, recreation, and status (Gilligan 1982; Kuttler, LaGreca, Prinstein 1999; Savin-Williams and Berndt 1990). Girls' friendship networks are usually smaller and more exclusive than boys (Kuttler, LaGreca, Prinstein 1999). Relationships between girls tend to be closer than those of boys (Collins and Laursen 1999) and involve more emotional sharing and self-disclosure (Savin-Williams and Berndt 1990; Windle 1994). Adolescent girls also express greater interest in their friends, greater concerns about their friend's faithfulness, and greater anxiety about rejection (Berndt 1982; Kuttler, LaGreca, and Prinstein 1999). Because

boys and girls have different types of relationships with their friends, the association between integration into the friendship group and depression could also differ by gender.

Smaller and more intimate groups form in the context of the larger peer network (Ennett and Bauman 1996). A friendship group is a collection of individuals who spend time with each other and develop close relationships (Hartup 1993). However, an adolescent can have a close friendship while having only a peripheral position in the friendship group (Bagwell, Newcomb, and Bukowski 1998). Therefore, as used in this study, “friendship group” also includes more structural aspects normally associated with the clique. A clique is a friendship circle with mutually sociometrically connected members (Hallinan 1979) and a hierarchical structure (Adler and Adler 1995). Whereas relationships between friends are important, position in the group and the structure of the friendship group must also be recognized since characteristics of the friendship group can predict behavior beyond the characteristics of individual members (Ennett and Bauman 2000; Gold 1970).

#### *Having Friends and Relationships with Friends*

In general, having friends is associated with a sense of well-being across the lifespan (Hartup and Stevens 1997). This seems to be especially true during adolescence. Teens feel more excited and are happier when they interact with their friends (Csikszentmihalyi and Larson 1984). Having friends is also associated with increased self-esteem (Bishop and Inderbitzen 1995; Coates 1985). Additionally, having more friends (Field, Diego, and Sanders 2001; Gest, Graham-Bermann, and Hartup 2001) and engaging in more frequent activities with friends (Kandel and Davies 1982; Vernberg 1990) have been found to be associated with decreased adolescent depression.

Conversely, studies have also documented the association between poor relationships with friends and numerous negative outcomes. Teens who have lower reciprocity and more aggression in their closest friendships engage in more internalizing and self-destructive behavior (Windle 1994). And whereas students who are liked by their friends are perceived as less worried and unhappy (Ostberg 2003), being unpopular and rejected by friends during adolescence is associated with poor academic performance, dropping out of high school, higher rates of delinquent behavior (Savin-Williams and Berndt 1990), increased aggression (Cairns et al. 1988), and greater depression (Rubin et al. 1995).

#### *Integration within the Friendship Group*

The number of friends that a person has and the number of times a person is nominated as having a relationship with someone else in their friendship group, as discussed above, are the most common measures of social network utilized by past studies (Lin and Peek 1999). Studies normally use number of friends to measure network size and the number of relationships between the individuals in the network to measure density. More recent research has included centrality: an individual's position within the friendship network determined by ties to others in the group (Haynie 2001).

Occupying a more central position in a friendship group has been found to be associated with greater cooperation, popularity, and leadership skills (Farmer and Rodkin 1996). Feelings of distress and worry have been found to increase among teens with positions farther away from the center of the friendship group (Ostberg 2003). Furthermore, position in a friendship network has also been found to moderate the association between characteristics of other group members and an individual

adolescent's behavior. More centrally located teens are more affected by the delinquent activities of their friends in the group (Crosnoe and Nedham 2004; Haynie 2001).

However, gender differences have been found in associations with centrality. Greater network centrality is associated with higher levels of popularity among girls, but increased levels of aggression among boys (Xie, Cairns, and Cairns 1999). Network centrality can thus be associated with pro-social and antisocial behavioral styles (Gest, Graham-Bermann, and Hartup 2001) depending on gender.

### *Costs of Social Integration*

Social integration can, sometimes, result in problems. The costs related to social integration within a larger social network cannot be summarily ignored (Frey and Rothlisberger 1996). Maintaining ties to numerous friends can constrain autonomy and involve obligations (Mirowsky and Ross 2003). For women, especially, social connectedness can increase symptoms of mental illness if obligations to provide social support to others are associated with role strain (Kawashi and Berkman 2001). And specifically for adolescents, increased time with friends may mean spending less time at school functions and with the family. This resulting absence of the structure and support provided by school and family could increase stress and delinquent behaviors (Mechanic 1983; Regnerus 2002). Friendship groups can also be a source of pressure to conform to peer expectations (Connolly and Goldberg 1999, 274). But in all, studies generally show the mental health benefits associated with interactions with friends (e.g. Gest, Graham-Bermann, and Hartup 2001; Kandel and Davies 1982; Vernberg 1990), supporting the long-standing assumption regarding the general benefits of social integration.

## **Theoretical Approach and Hypothesis**

As a result of the separate sociological and developmental traditions utilized to study numerous different outcomes related to adolescent friendship, theoretical orientations used in the research vary widely. Sociologists have tended to use Sutherland's Differential Association Theory and Hirschi's Social Control Theory (Haynie 2001) in order to focus on how members of friendship groups influence each other's deviant behavior. Conversely, developmentalists have utilized theoretical orientations such as Sullivan's Interpersonal Theory (1953) and Bronfenbrenner's Ecological Perspective (1979) to stress how friendship groups help to provide the adolescent with an identity and promote normal psychosocial development.

Whereas specific theoretical orientations may differ depending on the outcome of interest, social network analysis is being utilized more by researchers in both traditions to identify friendship links between adolescents and trace the structure of friendship groups (Wasserman and Faust 1994). A social network perspective assumes that the norms and expectations of the friendship group can influence individual adolescent behavior (Bearman and Bruckner 1999). Additionally, the structure of the friendship group has consequences for individual members beyond the characteristics of the individuals in the group (Klov Dahl 1985, 1204; Wasserman and Faust 1994). Since patterns of friendship ties direct the course of information, support, and norms (Ennett, Bailey, and Federman 1999), an individual's position in the friendship group, measured by centrality, is associated with how influential the friendship group is on the individual. Adolescents who occupy a more central position are exposed to more communication and interaction with others in the group than adolescents located in peripheral positions (Giordano 1983).

A social network perspective provides a solid theoretical foundation for the investigation of the association between gender differences in depression and integration at the group level (e.g. Pescosolido 2006). In short, more central positions indicate greater integration within the friendship group. But to account specifically for gender differences in integration and depression, the conceptual model developed in Chapter 2 must also be followed. In short, with social integration conceptualized a moderator, differences in gender reactivity to social integration is expected.

Girls are socialized to maintain relationships. Given that girls' relationships are closer than those of boys (Collins and Laursen 1999) and characterized by more emotional sharing (Savin-Williams and Berndt 1990), a logical assumption is greater female reactivity to social integration at the group level. This greater female reactivity has also been the traditional assumption. Social integration at the group level could benefit girls even more since increased connections and a more central position within the group can provide for the assessment of greater female popularity through social comparisons: the gender specific mechanism through which social integration is associated with female depression. Occupying a more peripheral position in the friendship group, conversely, would be expected to be associated with increased depression. To examine the extent to which the association between gender and depression is moderated by levels of social integration into the friendship network, I advance the traditional assumption as the main hypothesis.

*Greater integration into the friendship group will be associated with decreased depression, especially for girls.*

However, a more central position within the friendship group can also indicate higher rank in the group hierarchy and greater social worth through status for boys. In this case, it could be argued that a more powerful position within the group would be more important for boys' depression. Given this alternative explanation, this chapter will test whether the traditional assumption about girls holds.

## **Data and Method of Analysis**

### *Data and Measures*

Data for the analyses in this chapter are from Add Health (Udry 1998), described in Chapter 3. The dependent variable is a 19 question version of the CES-D included in Wave II of the Add Health. The individual, family, and school control variables detailed in Table 3.1 along with the individual-level factors (number of nominations received and number of friends nominated) and friendship integration measures (centrality and friendship involvement) presented in Table 3.3 are used to predict depression. The construction of all variables is discussed in detail in Chapter 3. Whereas excellent social network variables are available in the Add Health, a questionnaire can only yield a certain amount of information regarding social integration into the friendship group since respondents can not elaborate on more personal and complex aspects of integration. Depth is sacrificed for a nationally representative sample.

### *Method of Analysis*

The statistical models in this chapter are used to address the main hypothesis: greater integration into the friendship group will be associated with decreased depression, especially for girls. Since depression (measured at the interval level with a version of the CES-D scale) is predicted using a set of dichotomous and interval variables, multiple

regression is utilized. Multiple regression allows for the estimation of how friendship group variables are associated with depression while controlling for the effects of the other factors.

Add Health data were collected in cluster samples in which the clusters were chosen with unequal probability and observations were not independent nor identically distributed (Chantala and Tabor 1999). To ensure unbiased estimates and nationally representative results, this design effect and unequal probability of selection is corrected by using statistical programs capable of analyzing complex surveys. Analyses are conducted in SAS using proc surveyreg and weighted by the strata (region), cluster (psuscid2 –the school), and sampling weights (gswgt1). A baseline model using only the control variables is fit first. The second model introduces the friendship integration measures. Then, a third model is specified with interaction terms (female x centrality – and– female x each friend involvement variable) to observe if different associations exist for boys and girls.

## **Results**

### *Descriptive Analysis*

The descriptive statistics in Table 3.3 indicate that most of the means and proportions of the individual level factors are fairly similar for boys and girls. Higher proportions of both girls and boys have moderate levels of friendship involvement. However, higher proportions of girls nominated 10 friends on the Wave I survey. Greater proportions of boys were also more likely not to nominate any friends and to indicate no friendship involvement. Furthermore, girls received a greater number of nominations and have slightly higher mean centrality scores.

### *Multivariate Analysis*

Table 5.1 presents the results from the three multilevel models predicting teen depression. Model 1 is a baseline model and only includes control variables. Results from Model 1 are generally consistent with previous findings in the literature and indicate that while controlling for the effects of the other variables, females have depression scores that are .91 points higher than males, on average. Each additional year of age is associated with a .18 point increase in depression. Asians and Hispanics have higher depression scores when compared to whites. Reporting greater general health, more self esteem, and a higher GPA are associated with decreased depression scores. Respondents who nominated 7-9 and 10 friends have lower depression scores when compared to students who did not nominate any friends. Family control variables indicate that living in a single family is associated with an increase of .49 points in depression compared to respondents living with 2 person biological families. Also, increased parental education is associated with decreases in depression. None of the school-level control variables or the number of nominations received from other students at the school are significant predictors of depression in the model.

Model 2 includes the friendship integration measures. Greater centrality within the friendship group is associated with decreased depression. Controlling for the effects of the other variables in the model, for every point that students' centrality increase, their depression scores decrease by .36 points. None of the dichotomous measures of friendship involvement are statistically significant predictors of depression. These results are surprising given that past research has indicated engaging in more frequent activities

with friends is associated with decreased adolescent depression (Gest, Graham-Bermann, and Hartup 2001; Kandel and Davies 1982; Vernberg 1990).

Model 3 includes cross level interaction terms for all of the friendship integration measures. In short, none of the interaction terms are statistically significant. This indicates that both the effects of centrality and friendship involvement are similar for boys and girls.

### **Discussion**

Greater integration into the friendship group does not appear to be associated with greater decreases in depression for girls. The friendship involvement measures are not statistically significant and the effect of the centrality variable in the model is similar for boys and girls. Therefore, the main hypothesis is not supported. The traditional assumption of greater female vulnerability to a lack of integration does not seem to hold at the friendship group level.

Results from the analyses in this chapter suggest that the depression of boys and girls is equally sensitive to social integration within the friendship group. This finding is logical given that during adolescence, friends become increasingly important (Brown 1990; Larson and Bradney 1988; Younis and Smollar 1985) for both boys and girls. However, previous research indicates that relationships with friends differ for boys and girls. Boys learn to be competitive (Windle 1994) and emphasize shared instrumental activities (Gilligan 1982; Kuttler, LaGreca, Prinstein 1999) whereas girls are more cooperative and express greater self-disclosure (Maccoby 1998; Thorne and Luria 1986). Even though centrality is associated with similar decreases in depression, increased

centrality or integration within the friendship group may not necessarily have the same meaning for boys and girls because their friendships differ.

In order to explain how integration into the friendship group could be different for boys and girls, the model presented in Chapter 2 highlights gender differences in the conceptualization of social worth. For boys, increased dominance in the group signifies higher rank in the hierarchy and greater social worth through status. Conversely, increased connections lead to greater female social worth through popularity. Past research has indicated that greater network centrality is associated with higher levels of popularity among girls, but increased dominance and aggression among boys (Xie, Cairns, and Cairns 1999). This suggests that greater friendship integration could be equally important to the status of boys but to the popularity of girls. However, the gender specific importance of integration into the friendship group for boys' status and girls' popularity cannot be addressed further with the data. Further qualitative research is needed to delineate the association between centrality and the gender-specific conceptions of social worth.

### **Implications for Theory**

Findings from this chapter have implications for theory. Considering that analyses suggest integration into the friendship group is equally important for boys and girls, it may be inaccurate for theoretical approaches to overstate the greater influence of the friendship group on girls. Boys and girls are both very concerned about their friendship groups. The image of the autonomous boy and the dependent girl is not precise. Furthermore, studying the quality of relationships could also reveal something different than network position. Since friendship group integration is similarly important

to both boys and girls, theories must look beyond an adolescent's close friends to account for differences in depression. To this end, focusing on the influence of peers who are not necessarily considered friends or romantic partners could prove to be beneficial.

Table 5.1: Results from the Multiple Regression Models Predicting Wave II Depression by Integration into the Friendship Group

	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
<i>Individual-Level Controls</i>						
Female (F)	.91***	(.18)	.91***	(.18)	.45	(.61)
Age	.18**	(.06)	.16**	(.06)	.16**	(.06)
Non-Hispanic White‡						
Non-Hispanic Black	.30	(.25)	.32	(.25)	.33	(.25)
Non-Hispanic Asian	1.26**	(.47)	1.30**	(.47)	1.32**	(.48)
Hispanic	.71*	(.30)	.72*	(.30)	.74*	(.30)
Other Race	.57	(.60)	.57	(.60)	.59	(.60)
Looks Older	.30†	(.17)	.30†	(.16)	.30†	(.17)
Looks about Average‡						
Looks Younger	.08	(.21)	.09	(.21)	.09	(.21)
Overweight	-.35†	(.21)	-.35†	(.20)	-.34†	(.21)
Average weight‡						
Underweight	-.14	(.24)	-.15	(.24)	-.14	(.24)
General Health	-.41***	(.12)	-.40**	(.12)	-.39**	(.12)
Self Esteem	-.92***	(.15)	-.92***	(.15)	-.92***	(.15)
Wave 1 Depression	.51***	(.01)	.51***	(.01)	.51***	(.01)
GPA	-.60***	(.14)	-.58***	(.14)	-.58***	(.14)
<i>Individual-Level Factors</i>						
Number of Nominations Received	.03	(.02)	.05†	(.03)	.05†	(.03)
No Friends Nominated‡						
1-6 Friends Nominated	-.25	(.32)	-.25	(.38)	-.21	(.39)
7-9 Friends Nominated	-.71*	(.32)	-.55	(.40)	-.50	(.41)
10 Friends Nominated	-.66*	(.33)	-.45	(.45)	-.41	(.46)
<i>Family-Level Controls</i>						
Biological 2 Person Family‡						
Single Family	.49*	(.21)	.47*	(.20)	.48*	(.20)
Step Family	.39	(.34)	.38	(.34)	.38	(.34)
Other Family	.89†	(.50)	.89†	(.50)	.89†	(.50)

n = 8,997

\* p < .05; \*\* p < .01; \*\*\* p < .001; † p < .10

Notes: ‡ excluded as reference category.

Table 5.1 (Continued): Results from the Multiple Regression Models Predicting Wave II Depression by Integration into the Friendship Group

	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
Parent's Highest Education (PHE)	-.24**	(.07)	-.23**	(.07)	-.23**	(.07)
<i>School-Level Controls</i>						
Midwest‡						
West	.14	(.30)	.16	(.31)	.15	(.31)
South	.24	(.21)	.25	(.21)	.25	(.21)
Northeast	.09	(.22)	.06	(.22)	.06	(.21)
Suburban‡						
Urban	.03	(.19)	.05	(.19)	.04	(.20)
Rural	-.40	(.25)	-.40	(.25)	-.40	(.25)
Big School	.34	(.21)	.34	(.21)	.35	(.21)
Medium School‡						
Small School	.32	(.21)	.28	(.21)	.28	(.21)
Public School‡						
Private School	.30	(.28)	.29	(.28)	.31	(.28)
<i>Friendship Integration Measures</i>						
Friendship Group Centrality			-.36*	(.18)	-.47*	(.20)
No Friendship Involvement‡						
Low Friendship Involvement			.35	(.34)	.27	(.31)
Medium Friendship Involvement			-.03	(.32)	.02	(.36)
High Friendship Involvement			.35	(.32)	.06	(.35)
<i>Interactions</i>						
F x Centrality					.22	(.24)
F x Low Friendship Involvement					.26	(.63)
F x Medium Friendship Involvement					.03	(.64)
F x High Friendship Involvement					.64	(.69)
Intercept	9.37***	(1.28)	9.42***	(1.27)	9.52***	(1.24)

n = 8,997

\* p < .05; \*\* p < .01; \*\*\* p < .001; † p < .10

Notes: ‡ excluded as reference category.

## **Chapter 6: Romantic Relationship Involvement**

### **Introduction**

The emergence of romantic relationships is a defining characteristic of adolescence (Hartup 1993). As adolescents grow and mature, romantic relationships become more important than spending time with others in the friendship group (Adams, Laursen, and Wilder 2001; Sullivan 1953). Far from being the frivolous infatuations once thought, adolescent romantic relationships serve important developmental functions, such as helping teens learn necessary interpersonal skills (Feiring 1996) and preparing them for later relationships (Erikson 1959; Sullivan 1953). Not all aspects of teen romance, however, are beneficial. For example, involvement in adolescent romantic relationships has been found to be associated with increased depression, especially for girls (Gotlib, Lewinsohn, and Seeley 1998; Welch, Grello, and Harper 2003). Indeed, girls' greater vulnerability to romantic involvement during adolescence has been identified as a driving force behind the gender difference in depression that emerges during the teen years (Joyner and Udry 2000).

Such gender differences in the association between romantic relationships and depression likely result from the different implications that romance has for how boys and girls assess their self-worth. A girl's popularity depends on maintaining relationships (Brown 1999, 316), including romantic relationships that can be casual and short-lived (Connolly and Goldberg 1999, 278), but girls must also delay intercourse with a romantic partner to maintain their reputations and popularity (Schlossman and Cairns 1993). Conversely, boys generally gain status by having sex (Anderson 1990), and involvement

in adolescent romantic relationships has been found to increase boys' status in friendship groups (Connolly et al. 1999; Levesque 1993).

In this chapter, I further explore the role of romantic relationships in gender differences in depression. Here, a romantic relationship is an element of social integration in terms of emotional bonds and group status. Assuming that boys and girls have different reactions to social integration (social integration as moderator), I expect that greater involvement in a romantic relationship will be associated with increased depression for girls, but decreased depression for boys. To test this hypothesis, I will use data from Add Health: a study containing detailed information about adolescents and their romantic involvements. Weighted multiple regression analysis will estimate depression as a function of different types of romantic relationships and then determine if this link differs by gender.

This study contributes to the literature regarding the association between romantic relationships and adolescent mental health in two ways. First, the traditional assumption of female vulnerability to lower levels of social integration does not appear to apply to the personal level of a specific dyadic relationship (i.e. Joyner and Udry 2000). A gender-specific analysis that considers aspects of both the participation and sexual activity in a romantic relationship will help to illuminate this inconsistency. Second, studying the extent to which the association between gender and depression is moderated by levels of involvement in a romantic relationship can help to better understand the gender differences in depression during adolescence.

## **Adolescent Romantic Relationships**

As contact with opposite sex friends increases during the teen years and adolescents mature, greater social expectations for dating encourage the formation of romantic relationships (Brown, Feiring, and Furman 1999). Many teens start to date between the ages of 14 and 16 (Thornton 1990). By age 16, most adolescents have had at least one romantic relationship (Carver, Joyner, and Udry 2003).

### *Developmental Aspects*

Romantic relations can be considered as a developmental extension of friendship since intimate relationships with opposite-sex partners gradually replace the same-sex friendship groups of late childhood (Adams, Laursen, and Wilder 2001; Sullivan 1953). Beginning as casual and short-lived infatuations (Connolly and Goldberg 1999, 278), only in later adolescence do teen relationships become as intimate and involved as those of adults (Adams, Laursen, and Wilder 2001; Shulman and Scharf 2000). However, romantic relationships serve as important developmental contexts for learning social and communication skills such as intimacy, disclosure, and negotiation (Feiring 1996; Furman and Wehner 1994). Both Sullivan (1953) and Erikson (1959) stress the importance of dating during adolescence for preparing individuals to form later intimate relationships during early adulthood.

## **Adolescent Romantic Relationships and Depression**

Adolescent romantic relationships are developmentally important and can provide for positive emotions such as passion, mutual understanding, and warmth. However, teen romance is also the source of many negative feelings such as envy, anger, despair, anxiety, and depression (Connolly and Goldberg 1999; Larson, Clore, and Wood 1999;

Levesque 1993). As such, romantic activity is closely associated with numerous aspects of adolescent mental well-being (Joyner and Udry 1999).

Most of the findings concerning romantic relationships and mental health outcomes are from studies using adult samples comparing the married to the unmarried. These adult studies have greatly influenced the way teen romantic relationships have been investigated. Research focused on adult romantic relationships has generally highlighted the beneficial aspects of marriage in providing the economic resources, social integration, social support, and sense of meaning (Umberson and Williams 1999) associated with decreased depression. Given the results from studies using adult samples along with general ideas about the positive aspects of social integration and friendship, an association between romantic relationships and better teen mental health could logically be predicted. However, the beneficial features of marriage can not always be equated to teen dating for at least three reasons.

First, many of the benefits associated with marriage actually have to do with the pooling of economic resources and economies of scale. Married people have higher household incomes (Smock, Manning and Gupta 1999) and report less economic hardships (Mirowsky and Ross 2003, 89). Economic well being is associated with improved mental health (McLanahan 1997) and is an important component of why married couples have lower levels of depression (Ross 1995). Because teens normally do not move-in together or pool their incomes, this aspect of marriage does not apply to adolescent romantic relationships.

Second, similar to adults, adolescents do identify passion as an important characteristic of romantic relationships that differentiates romance from cross-sex

friendships (Connolly, et al. 1999). However, teens in early and middle adolescence also identify the primary purposes of romantic relationships as recreation, identity formation, status enhancement, and gaining autonomy from parents (Brown 1999). Therefore, adolescent romantic relationships are more motivated by social status, personal development, and sexual desire than the economic factors influencing marriage decisions (Brown, Feiring, and Furman 1999; Lichter et al. 1992).

Third, marriage is thought to influence adult mental health by providing increased social support and social integration (Umberson and Williams 1999). This assumption seems to be based on the idea that single adults have few friends and are living on their own. However, many teens already enjoy benefits associated with social support and integration since they live with their parents and are extensively involved with their friendship groups (Barrett and Turner 2005; Larson and Bradney 1988). Involvement in teen romantic relationships can alter the positive and supporting relationships with friends and parents by decreasing the time normally spent with friends and causing increased conflict with parents (Aneshensel and Gore 1991; Gray and Steinberg 1999). In actuality, romantic relationships are more likely to be the cause of much stress and depression during adolescence (Darling et al. 1999; Seiffae-Krenke 1995), even more than the school or family (Larson, Clore, and Wood 1999).

### **Gender Differences in Romantic Relationships and Depression**

As illustrated in the previous section, adolescent romantic relationships differ from those of adults because adolescents are in different developmental life stages and do not necessarily have the same types of romantic relationships for the same reasons. However, differences also exist in how boys and girls experience romantic relationships.

Adolescents who become romantically involved experience greater increases in depression than their non-dating peers. And among those who become romantically involved, girls report more depressive symptoms than boys (Gotlib, Lewinsohn, and Seeley 1998; Joyner and Udry 2000; Welch, Grello, and Harper 2003). Girls can be especially susceptible to depression in romantic relationships for at least three reasons.

First, girls have a stronger orientation to relationships (Connolly and Johnson 1996; Gilligan 1982), and are more responsive to social networks (Giordano 2003; Martin 1996). Considering that adolescent romantic relationships are notoriously casual and short lived (Connolly and Goldberg 1999, 278), any stress or conflict experienced in the relationship or during the break-up process can be very distressing for girls. Over-involvement in dating, especially, at age 16 has been found to be associated with decreased academic achievement and emotional health for girls (Zimmer-Gembeck, Siebenbruner, and Collins 2001).

Second, girls are more likely to identify self-disclosure and support as being more important components of a romantic relationship than do boys (Feiring 1996). Self-disclosure serves as an important means of establishing intimacy for girls whereas boys are more likely to rely on shared activities (Camarena, Sangiani, and Petersen 1990). Boys may be reluctant to discuss their personal feelings especially if they do not want to appear weak out of concern for maintaining power and dominance (Feiring 1999, 222). Therefore, this lack of shared self-disclosure could make romantic relationships emotionally unfulfilling for girls.

Third, the sexual nature of an adolescent romantic relationship can be associated with gender differences in depression. Like involvement in teen romantic relationships,

sexual activity during adolescence has also become normative (Warren et al. 1998). By age 18, 62 to 76 percent of American high school students have had sex (Kann and Warren 1996) and most teenagers (75%) experience their first sexual activity while participating in a romantic relationship (Manning, Longmore, and Giordano 2000). Sexual activity has been found to be associated with adolescent depression for both boys and girls (Burge et al. 1995; Hallfors et al. 2004; Harris, Duncan, and Boisjoly 2002; Longmore et al. 2004). However, girls experience increased depression and greater depressive symptoms compared to boys engaging in similar levels of sexual activity (Brooks et al. 2002; Kowaleski-Jones and Mott 1998; Waller et al. 2006; Whitbeck, Conger, and Kao 1993).

### **Summary and Hypothesis**

Romantic relationships become increasingly normative during adolescence; however, they can cause much distress if demands for commitment and intimacy overwhelm an individual's emotional maturity (Larson, Clore, and Wood 1999). Adolescent romantic relationships differ from adult marital relationships in aspects such as the primary purpose of the relationship and since positive and supportive relationships with friends and parents can be altered. Additionally, teen romantic relationships have also been found to be associated with increased depression for girls largely related to issues involving sexual activity and stronger female orientations to relationships.

Not much formal theory exists to explain why romantic relationships are associated with increased depression for teens. However, gender differences in the association between involvement in a romantic relationship and depression can be explained with the conceptual model developed in Chapter 2. As previously discussed,

different male and female styles of interaction are learned in same-sex friendship groups. Girls learn the importance of maintaining relationships whereas boys are encouraged to be physical and competitive (Maccoby 1998). As boys and girls come together in romantic relationships, disparate styles of interaction can cause problems with girls relying on self-disclosure as a means of establishing intimacy whereas boys will prefer shared activities (Camarena, Sangiani, and Petersen 1990) and be reluctant to discuss their personal feelings (Feiring 1999, 222).

These different interaction styles are also associated with how boys and girls assess their self worth with boys gauging their status through feedback and girls assessing their popularity with social comparison. Involvement in a romantic relationship can aid in the preservation of membership in a friendship group and contribute to increased status for boys (Connolly et al. 1999; Levesque 1993). For girls, participation in a romantic relationship can provide for a confirmation of self-worth (Erikson 1968) and validate conceptions of social acceptance and romantic appeal (Zimmer-Gembeck, Siebenbruner, and Collins 2001) necessary to attain increased popularity (Holland and Eisenhart 1990). However, an incongruity exists in many romantic relationships since boys generally gain status by having sex (Anderson 1990) whereas girls can experience a loss in popularity (Coleman 1966). But because girls' popularity depends largely on successfully maintaining relationships (Brown 1999, 316), romantic relationships can be especially distressing for adolescent girls since they require precariously balancing pressure exerted from their boyfriends to have sex and social expectations to remain chaste (Maccoby 1998, 206; Schlossman and Cairns 1993).

Given girls' greater orientation to relationships, the tumultuous nature of teen romantic relationships, and issues related to sexual activity discussed above, good reasons exist to assume that girls are more vulnerable to romantic relationships. To examine the extent to which the association between gender and depression is moderated by levels of involvement in a romantic relationship, I advance the main hypothesis.

*Greater involvement in a romantic relationship will be associated with increased depression for girls, but decreased depression for boys.*

Involvement in an adolescent romantic relationship has been found to protect against social anxiety (La Greca and Harrison 2005). This suggests that involvement in a romantic relationship can contribute to increased status and the preservation of membership in a peer group (Connolly et al. 1999; Levesque 1993) for boys. Since boys are concerned with status and position within the group, involvement in a romantic relationship can be predicted to be associated with decreased depression for boys.

## **Data and Method of Analysis**

### *Data and Measures*

Data for the analyses in this chapter are from Add Health (Udry 1998), described in Chapter 3. The dependent variable is a 19 question version of the CES-D reported in Wave II. The individual, family, and school-level control variables detailed in Table 3.1 along with the relationship variables presented in Table 3.4 are used to predict depression. A discussion of how all of the variables were coded is provided in Chapter 3.

### *Method of Analysis*

As stated in Chapter 3, respondents who reported being in an ongoing relationship at Wave I were excluded from the analyses in this chapter. This is a potential limitation

since leaving out these cases can unintentionally bias the analysis. However, excluding the cases effectively allows for better observation of how the different types of relationships formed between waves are associated with Wave II depression. To compare the selected and unselected cases, Table 6.1 provides descriptive statistics for the respondents who were and were not involved in an ongoing relationship at Wave I. As seen, since more females reported an ongoing relationship at Wave I, they were not selected. Non-selected students also tended to be almost one year older than those selected for analysis. The selected students, who reported no ongoing romantic relationships at Wave I, reported lower depression scores at Waves I and II than students reporting ongoing relationships at Wave I. Fewer of the selected students reported having intercourse or a serious relationship between waves. Selected students also reported fewer breakups between waves and less reported being involved in an ongoing relationship at Wave II.

These differences in the characteristics of the sample selected for analysis could have an effect on the findings. However, by excluding the teens who are already involved in a romantic relationship at Wave I, I could focus on how Wave II depression is associated with characteristics of the relationships that form between the waves. Whereas excluding so many cases is not ideal ( $n = 3,559$ ), a methodological advantage is gained. Furthermore, results from Model 1 in Table 6.2 are fairly similar to the findings obtained in the baseline models of Chapters 4 and 5, assuaging concerns about a possible selection factor in choosing only respondents who are not involved in ongoing relationships at Wave I.

The statistical models in this chapter are used to address the main hypothesis: greater involvement in a romantic relationship will be associated with increased depression for girls, but decreased depression for boys. Multiple regression is utilized since an interval-level measure of depression is predicted using a set of dichotomous and interval variables. The multiple regression model will allow for the estimation of how involvement in a romantic relationship is associated with depression while controlling for the effects of the other variables.

Add Health data were collected in cluster samples in which the clusters were chosen with unequal probability and observations were not independent nor identically distributed (Chantala and Tabor 1999). To ensure unbiased estimates and nationally representative results, this design effect and unequal probability of selection is corrected by using statistical programs capable of analyzing complex surveys. Analyses are conducted in SAS using proc surveyreg and weighted by the strata (region), cluster (psuscid2 –the school), and sampling weights (gswgt1). A baseline model using only the control variables is fit first. The relationship variables are then added in a second model to observe their main effects. Finally, a third model introduces the interaction terms (sex x each romantic relationship variable) to evaluate any differences that may exist for boys and girls.

If an interaction term is significant, the slopes for boys and girls are assumed to differ depending on the involvement in the romantic relationship (Singer 1998). Interaction effects are then interpreted by calculating multiple equations for each regression to produce different predicted depression scores for boys and girls at different levels of student x relationship involvement. First, an adjusted intercept is derived by

multiplying the coefficients for all variables in the equation by the respective variable's mean and then summing all of the values (omitting the effects of the interaction term and the main effects of both variables involved in the interaction). This adjusted intercept is then added to both the low and high effects of the interacting variables to produce a predicted depression score for boys and girls at both levels of the relationship variable.

## **Results**

### *Descriptive Analysis*

The descriptive statistics in Table 3.4 indicate that most of the means and proportions of the individual level factors are fairly similar for boys and girls. However, girls nominate a greater number of friends and report higher levels of friendship involvement. Higher proportions of boys report having sex without being involved in a romantic relationship between Waves I and II. Girls indicate having more serious, ongoing relationships (both sexual and non-sexual) than boys. Moreover, girls report a larger number of relationships that have ended between the waves.

### *Multivariate Analysis*

Table 6.2 presents the results from the three multilevel models predicting teen depression. Model 1 is a baseline model and only includes the control variables. The relationship variables are included in Model 2. Controlling for the effects of the other variables in the model, students who are in a serious, sexual, ongoing relationship have depression scores that are 1.25 points higher than students who had no romantic relationships or sexual involvement between Waves I and II. None of the other relationship variables are statistically significant. However, depression scores increase,

on average, by .50 points for every romantic relationship that ends ('break-ups') between Waves I and II.

The final model, Model 3, includes cross level interaction terms for all of the relationship variables. Interaction terms are statistically significant for female x serious, non-sexual relationships ending between waves and for female x the number of romantic relationships ending between waves. Because the interaction terms are significant, the slopes for boys and girls can be assumed to differ (Singer 1998). To more clearly interpret these interaction effects, I calculate predicted depression scores with multiple equations using Model 3 for boys and girls.

Whereas the variable indicating a serious, non-sexual relationship ending between waves does not have a statistically significant main effect in Model 2, the interaction term is significant in Model 3. Boys who were not involved in romantic relationships and did not have sex between Waves I and II (the reference category) have a predicted depression score of 10.33. Boys who were involved in a serious, nonsexual relationship that ended between Waves I and II have a predicted depression score of 10.95. However, girls who were not involved in a romantic relationship and did not have sex between waves had a predicted depression score of 10.81 whereas girls involved in a serious, nonsexual relationship that ended between waves have a predicted score of 9.09. These results are graphically illustrated in Figure 6.1. Whereas having a serious, nonsexual relationship that ended between waves is associated with a slight increase in depression for boys, it is associated with a decrease in depression for girls. Girls who reported the ending of their most recent serious, nonsexual relationship have lower depression than girls who were not involved in a romantic relationship between waves. Additionally, when the

depression scores of boys and girls who experienced the end of their most recent serious, non-sexual relationship are compared, the girls have lower depression than the boys.

Boys and girls who report 0 romantic relationships ending being between Waves I and II have depression scores of 10.13 and 10.61, respectively. However, reporting that 4 romantic relationships ended between waves is associated with a depression score of 9.33 for boys and 15.67 for girls. These results are illustrated in Figure 6.2 and indicate a much greater difference in depression for girls who report greater numbers of romantic relationships that ended between Waves I and II.

## **Discussion**

Contrary to expectations, involvement in a romantic relationship does not appear to be associated with greater increases in depression specifically for girls. As indicated in Model 2, involvement in an ongoing, serious, sexual relationship is associated with increased depression. But because its interaction term is not significant, the effect can be interpreted to be similar for boys and girls. Strictly speaking, the main hypothesis is not supported since being in an ongoing, serious, sexual relationship is associated with increases in depression for both boys and girls.

Involvement in an adolescent romantic relationship, alone, does not explain gender differences in depression. Results from the analyses in this chapter suggest that the association between romantic relationships and depression is more nuanced. In particular, results indicate the connection between several aspects of romantic relationship break-ups and depression, especially for girls. Interaction terms in model 3 illustrate that girls whose last serious, non-sexual relationship ended between interview

waves had lower depression; however, reporting greater numbers of romantic relationships ending between waves is associated with increased depression for girls.

In order to make sense of these seemingly contradictory findings, the conceptual model presented in Chapter 2 again points to gender differences in social worth and the importance of maintaining relationships for girls. In short, girls learn the importance of relationships in their early same-sex friendship groups since their more cooperative play style and more reciprocal discourse support the formation of connections. Increased connectivity to others leads to greater female social worth through popularity, assessed through social comparisons. Thus, girls' popularity depends on maintaining relationships (Brown 1999, 316), including romantic relationships during adolescence (Connolly and Goldberg 1999, 278). Of course, the interpretation of the results requires a degree of speculation since only associations between romantic involvement and depression can be identified. Causation cannot be established by the models used in this chapter.

Having a serious, non-sexual relationship could provide the validation for a girl's attractiveness and suitability as an acceptable romantic partner necessary for attaining increased social worth through popularity (Holland and Eisenhart 1990). The fact that the relationship was non-sexual is especially relevant since girls generally must delay intercourse to maintain their reputations and popularity (Attie and Brooks-Gunn 1989; Schlossman and Cairns 1983). Additionally, because the relationship has ended, the girl is currently free from the responsibilities of maintaining the relationship and any possible pressures from her partner to have sex. Using this reasoning, a serious, non-sexual relationship could be predicted to enhance a girl's popularity more than non-serious or sexual relationship types. This could explain why girls who experience the ending of a

serious, non-sexual relationship have lower depression scores than girls who did not have any relationship between the waves as well as the findings in past research indicating that high school girls with the highest self-esteem were those not who were not currently in a relationship but who had been involved in a steady relationship in the past (McDonald and McKinney 1994).

Conversely, results indicating that increased depression is associated with the ending of numerous romantic relationships between waves supports previous findings that over-involvement in romantic relationships has negative consequences, especially for girls (Zimmer-Gembeck, Siebenbruner, and Collins 2001). Using the conceptual model presented in Chapter 2, numerous break-ups could indicate that a girl is not likeable and is not a suitable partner. Additionally, considering that only 165 of the 3,268 girls chosen for analysis reported two or more romantic relationships ending between interview waves, experiencing many romantic break-ups is not normative. As such, a girl who is involved in numerous romantic relationships and break-ups could be considered unusual by others at the school and could damage her popularity by gaining a bad reputation. For boys, the difference in depression scores between boys reporting 0 break-ups and 4 break-ups is only 0.8. This result supports past findings that boys can gain status by having sex (e.g. Anderson 1990) and romantic relationships can contribute to increased status and preserve membership in friendship groups (Connolly et al. 1999; Levesque 1993) for boys.

### **Implications for Theory**

Even though not much formal theory exists to explain why romantic relationships are associated with increased depression for teens, findings from this chapter have

implications for theoretical approaches. Explanations linking romantic relationships with depression should consider more factors than involvement in a relationship. The type and quality of the romantic relationship are important and could have different gender-specific associations with depression. Sexual aspects of the relationship are also very important to account for since both boys and girls in an ongoing, sexual relationship have increased depression. Additionally, any theory explaining the association between romantic relationships and depression should also consider the break-up process itself as a possible source of depression (Sprecher 1994), especially for girls.

Table 6.1: Comparison of Characteristics of Selected and Non-Selected Cases

	Selected Cases		Non-Selected Cases	
	Mean	(S.D.)	Mean	(S.D.)
Female	.49	(.50)	.59	(.49)
Age	15.52	(1.54)	16.25	(1.43)
GPA	2.84	(.76)	2.73	(.74)
Wave II Depression	10.51	(7.26)	11.67	(7.64)
Wave I Depression	10.45	(7.10)	12.03	(7.94)
Esteem	4.13	(.59)	4.10	(.59)
Intercourse between Waves	.20	(.40)	.35	(.48)
Serious Relationship between Waves	.20	(.40)	.26	(.44)
Number of Breakups	.31	(.60)	.43	(.67)
Ongoing Romantic Relationship (Wave II)	.28	(.45)	.63	(.48)
n	6,695		3,559	

Table 6.2: Results from the Multilevel Models Predicting Wave II Depression by Involvement in Romantic Relationships

	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
<i>Individual-Level Controls</i>						
Female (F)	.88***	(.23)	.81***	(.23)	.48	(.33)
Age	.20**	(.07)	.14†	(.08)	.13	(.08)
Non-Hispanic White‡						
Non-Hispanic Black	.35	(.31)	.36	(.31)	.38	(.31)
Non-Hispanic Asian	1.11*	(.44)	1.20**	(.44)	1.20**	(.43)
Hispanic	.66†	(.34)	.65†	(.33)	.68*	(.33)
Other Race	.41	(.63)	.43	(.62)	.51	(.60)
Looks Older	.21	(.24)	.13	(.23)	.15	(.23)
Looks about Average‡						
Looks Younger	-.09	(.25)	-.04	(.25)	-.03	(.25)
Overweight	-.20	(.24)	-.12	(.25)	-.15	(.24)
Average weight‡						
Underweight	.06	(.25)	.05	(.25)	.05	(.25)
General Health	-.30*	(.13)	-.31*	(.12)	-.32*	(.12)
Self Esteem	-1.00***	(.21)	-1.02***	(.21)	-1.02***	(.21)
Wave 1 Depression	.53***	(.02)	.53***	(.02)	.52***	(.02)
GPA	-.51***	(.14)	-.46**	(.14)	-.43**	(.14)
<i>Individual-Level Factors</i>						
Number of Friends Nominated	-.11***	(.03)	-.11***	(.03)	-.11***	(.03)
Friendship Involvement	.19	(.15)	.09	(.15)	.11	(.15)
<i>Family Controls</i>						
Biological 2 Person Family‡						
Single Family	.44†	(.25)	.37	(.25)	.39	(.25)
Step Family	.45	(.44)	.27	(.45)	.28	(.43)
Other Family	.25	(.69)	.15	(.68)	.12	(.69)
Parent's Highest Education (PHE)	-.30***	(.09)	-.31***	(.09)	-.31***	(.09)

n = 6,277

\* p < .05; \*\* p < .01; \*\*\* p < .001; † p < .10

Notes: ‡ excluded as reference category. Cases are selected only if respondent is not in an ongoing relationship at Wave 1.

Table 6.2 (Continued): Results from the Multilevel Models Predicting Wave II Depression by Involvement in Romantic Relationships

	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
<i>School-Level Controls</i>						
Midwest‡						
West	-.03	(.38)	-.04	(.38)	-.05	(.38)
South	.05	(.28)	.05	(.27)	.07	(.27)
Northeast	-.19	(.31)	-.21	(.30)	-.20	(.30)
Suburban‡						
Urban	-.27	(.24)	-.30	(.25)	-.34	(.25)
Rural	-.31	(.30)	-.31	(.30)	-.30	(.30)
Big School	.52*	(.25)	.52*	(.25)	.52*	(.25)
Medium School‡						
Small School	.34	(.23)	.35	(.22)	.31	(.22)
Public School‡						
Private School	.26	(.30)	.27	(.30)	.37	(.31)
<i>Relationship Variables</i>						
Type of Relationship (Rel.)						
No Romantic Rel., No Sex‡						
No Romantic Rel., but had Sex			.07	(.47)	-.42	(.47)
(Last Rel. Ended between Waves) <sup>A</sup>						
Serious, Sexual			.79	(.69)	1.41	(.88)
Non-Serious, Sexual			1.19	(1.09)	2.78*	(1.21)
Serious, Non-Sexual			-.50	(.52)	.62	(.66)
Non-Serious, Non-Sexual			-.08	(.52)	.38	(.53)
(Ongoing Rel. at Wave II)						
Serious, Sexual			1.25*	(.52)	.88	(.64)
Non-Serious, Sexual			.36	(1.95)	-2.24	(2.33)
Serious, Non-Sexual			.44	(.37)	.33	(.34)
Non-Serious, Non-Sexual			.59	(.40)	.71	(.48)
Romantic Break-ups between Waves			.50*	(.23)	-.20	(.26)

n = 6,277

\* p < .05; \*\* p < .01; \*\*\* p < .001; † p < .10

Notes: ‡ excluded as reference category. <sup>A</sup> Indicates most recent relationship that ended before the Wave 2 survey. Cases are selected only if not in an ongoing relationship at Wave 1.

Table 6.2 (Continued): Results from the Multilevel Models Predicting Wave II Depression by Involvement in Romantic Relationships

	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
<i>Interactions</i>						
Female* No Romantic Rels, with Sex					1.62	(1.03)
(Last Relationship between Waves)						
Female* Serious, Sexual					-.89	(1.41)
Female* Non-Serious, Sexual					-3.06	(2.02)
Female* Serious, Non-Sexual					-2.34**	(.83)
Female* Non-Serious, Non-Sexual					-1.04	(.87)
(Ongoing Relationship at Wave II)						
Female* Serious, Sexual					.65	(1.01)
Female* Non-Serious, Sexual					4.15	(2.59)
Female* Serious, Non-Sexual					.20	(.71)
Female* Non-Serious, Non-Sexual					-.26	(.76)
Female* Romantic Break-ups between Waves					1.44***	(.38)
Intercept	9.13***	(1.38)	9.82***	(1.47)	10.14***	(1.48)

n = 6,277

\* p < .05; \*\* p < .01; \*\*\* p < .001; † p < .10

Notes: ‡ excluded as reference category. Cases are selected only if respondent is not in an ongoing relationship at Wave 1.

Figure 6.1: Interaction Effects for Ending of Most Recent Serious, Nonsexual Relationship

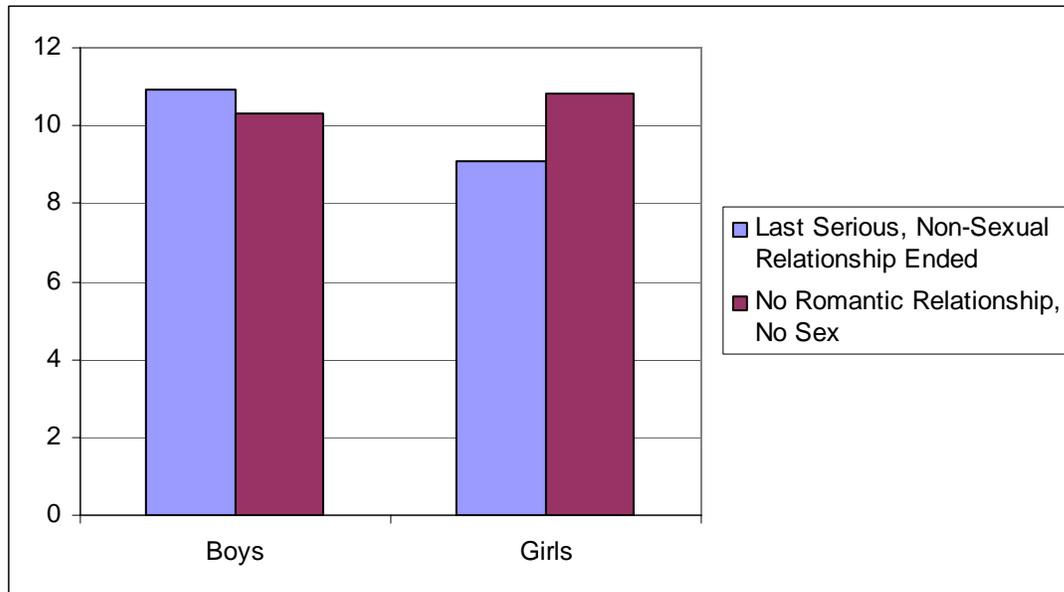
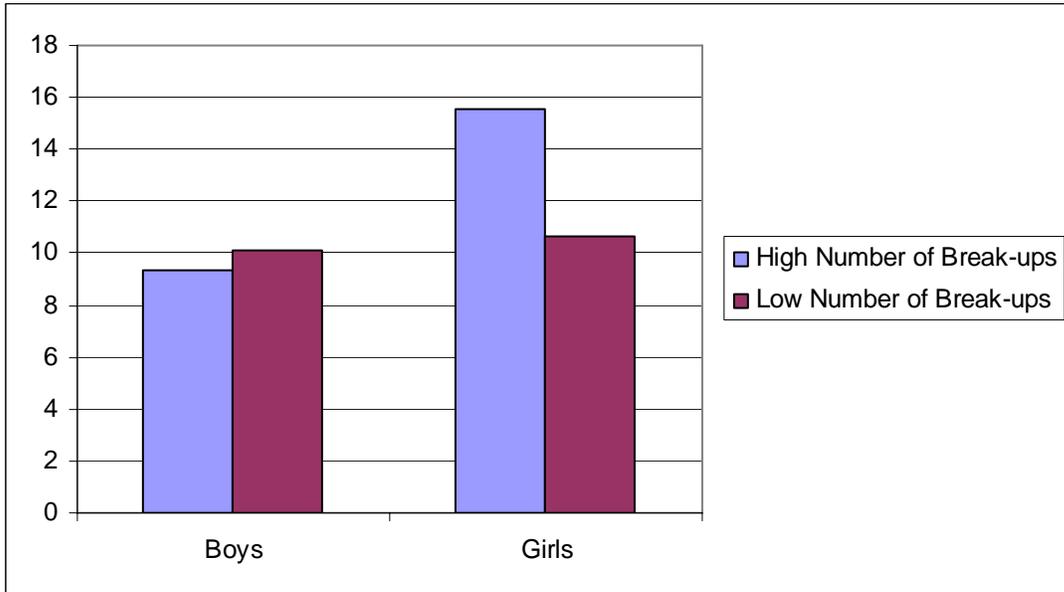


Figure 6.2: Interaction Effects for High and Low Numbers of Break-ups



## **Chapter 7: Social Feedback and Social Comparison**

### **Introduction**

The previous 3 chapters have analyzed the association between depression and social integration at the institutional, group, and personal levels. Chapter 4 illustrates that boys' depression appears to be more reactive to social integration at the high school level. In Chapter 5, the depression levels of both boys and girls are shown to be equally sensitive to social integration within the friendship group. Boys' and girls' depression also appears equally sensitive to involvement in romantic relationships in Chapter 6, although several aspects of romantic relationship break-ups have different associations with female depression. In all, analyses suggest that aspects of social integration at these distinct levels are related to depression and that this relationship can differ by gender. However, the quantitative analyses can only indicate associations between social integration and gender differences in depression without necessarily explaining why they exist. The conceptual model presented in Chapter 2 points to the importance of social feedback and social comparison as the gender-specific social and psychological mechanisms through which the elements of social integration are associated with depression. However, gender differences in the nature of social feedback and social comparison cannot be tested using statistical models since the Add Health survey does not include variables that adequately operationalize concepts from the theoretical model.

In this chapter, I examine the potential role of social feedback and social comparison in adolescent depression using qualitative data from the Identity and Social Relations Project. Based on the conceptual model developed in Chapter 2, I expect that

social comparison will be the main mechanism for girls and social feedback will be the main mechanism for boys.

This study contributes to the literature on social integration and adolescent mental health in several ways. First, identification of the gender specific mechanisms through which social integration is associated with depression is essential in understanding the social psychological processes related to gender reactivity. Second, an understanding of these gender specific mechanisms has the potential to inform initiatives aimed at helping depressed teens by suggesting more suitable approaches for boys and girls.

### **Review of the Literature**

A conceptual model was developed in Chapter 2 detailing how an appropriate level of social integration provides the social contact and positive interactions associated with increased self esteem and self worth. This increased sense of self worth, in turn, benefits mental health. However, the ways that boys and girls conceptualize and assess their respective self worth are influenced by early differences in socialization and the specific interaction styles learned in same-sex friendship groups. Feedback and social comparison were presented as the gender specific mechanisms through which social integration is associated with depression (with boys assessing their status using feedback and girls evaluating their popularity with social comparison). The conceptual model served as an adequate framework to guide the study of depression and social integration at the institutional, group, and personal levels in the previous three chapters. However, the intricacies of the model will now be examined more thoroughly to better understand the gender specific nature of feedback and social comparison in preparation for the analysis of the transcribed in-depth interviews of high school students. In addition to

reviewing and elaborating upon the conceptual model, the following discussion will also be utilized as an outline to integrate relevant findings from previous research.

### **Social Feedback and Social Comparison**

Prior research illustrates the association between greater integration into a social network and improved psychological well being (Barnett and Gotlib 1988; Horwitz, McLaughlin, and White 1998; Turner 1999). However, the specific mechanisms through which social integration is associated with depression remain largely unaddressed. In short, these mechanisms can be conceptualized as how individuals self-evaluate their social integration and social worth within the group. The information needed for this type of self-assessment can be obtained through three main sources: social feedback, social comparison, and self-observation (Pomerantz, Saxon, and Kenney 2001; Schoeneman, Tabor, and Nash 1984). Because this study assumes a sociological perspective, and is concerned with social integration, social feedback and social comparison are emphasized instead of the more individually-focused self-observation. Although earlier formulations of both social feedback and social comparison have undergone significant extension and revision, a review of the original ideas highlight their most essential concepts.

#### *Social Feedback*

One of the earliest significant articulations of social feedback can be traced to a re-conceptualization of the self. Pragmatic thinkers such as William James, Charles Cooley, and George Mead favored a notion of the self derived from social experience instead of earlier, more transcendental ideas of the self (Baumeister 1998). Mead (1934, 135), in particular, held that the self can only form within a social context through the

social process of communication. To this end, language –defined as social communication using significant symbols– efficiently provides for a shared meaning that allows individuals to take the attitudes of others (Mead 1934, 195). When people are able to take the attitudes and roles of others, they can view themselves from the perspective of others. Only through taking the perspective of the other can the self be objectified and self-consciousness can be attained (Mead 1934, 225).

According to Mead’s original theory of self development, the social feedback and evaluations communicated by others are very important because people must take the perspective of others in order to objectify their ‘selves.’ Put very succinctly, self-knowledge is developed through this communication and shared meaning with others. The responses and reactions of others, either actual or anticipated, are eventually utilized for aspects of self definition (Larson 1984; Lundgren 2004).

### *Social Comparison*

Festinger (1954) originally hypothesized that people are driven to evaluate their abilities and opinions in order to more accurately understand their own capabilities and limitations. Furthermore, the drive for evaluation is predicted to be stronger if the ability or opinion is important to the individual. This self-evaluation is best carried out by directly assessing personal attributes with objective, physical standards. However, when physical standards are not available, people will evaluate their abilities and opinions with comparisons to similar others. According to Festinger, this need for self evaluation through social comparison is a principle reason that people associate with others and affiliate with groups.

## **Gender Differences in the Conceptualization and Evaluation of Social Worth**

Social comparison and social feedback are both adequate means to self-assess integration and worth within the group. However, the choice of mechanisms can be greatly influenced by the specific conception of social worth and the types of standards available for self-assessment. Because girls are more likely to conceptualize their social worth through popularity, they tend to utilize social comparisons when evaluating themselves (Giordano 2003; Martin 1996). Conversely, boys are more likely to use social feedback (e.g. Herrald and Lucker 1995; Pomerantz, Saxon, and Kenney 2001) to assess their status. To understand these gender differences in conceptualizations and evaluations of social worth, a sociological explanation logically begins with differences in socialization.

From a very early age, boys are encouraged to be instrumental and independent (Gilligan 1982). Parents are more physical when they play with their sons (Maccoby 1998, 123), and teachers provide boys with more attention and praise than girls (Sadker and Sadker 1994). Researchers argue that since boys are socialized to be more independent and autonomous, they become more concerned with instrumental goals such as achievement and competence (Bartusch and Matsueda 1996, 150; Bush and Simmons 1987) and develop self concepts focused on uniqueness, personal agency, and self determination (Markus and Oyserman 1989).

Girls are generally socialized to be nurturing, to focus on relationships, and to care for others (Gilligan 1982; Marini 1988). Parents encourage their daughters to talk more about their emotions, promote gender-appropriate play themes (Maccoby 1998, 123), and they supervise girls more closely than boys (Browning, Leventhal, and Brooks-

Gunn 2005). As a possible result of being socialized to be caring and value relationships, girls come to focus on pleasing others, being liked, and become concerned about the assessments of others (Bush and Simmons 1987). Girls develop self-concepts based on connections and relationships with others (Cyranowski et al. 2000), and during adolescence, especially, girls become more sensitive to the opinions of others' (Brown and Gilligan 1992).

This early socialization from parents and teachers is important in initially shaping gender typed behavior (Fagot et al. 1985). However, some researchers have questioned the degree to which parent's treatment of their sons and daughters really differ (i.e. Lytton and Romney 1991) and argue that the educational system actually devotes more attention to the needs of girls (Sommers 2000). Additionally, direct socialization into appropriate gender roles is increasingly considered to be a limited explanation of gender differences in behavior since gender typed behavior can be learned and reinforced through the interaction with others in a social context (e.g. Thorne 1993). For example, children can begin to socialize themselves by patterning their behaviors and attitudes on same-sex models (Maccoby 1998, 8-9), once their gender identities are initially established. Friends can serve as adequate same-sex models, especially since they increase in importance during the school years (Brown 1990; Younis and Smollar 1985), and the segregated friendship groups can serve as interactive, social contexts.

#### *Conceptualizing Worth: Status and Popularity*

As discussed in Chapter 2, the rough play, competition, and physical aggression of boys' friendship groups establish a more defined dominance hierarchy (Maccoby 1998; Ridgeway, Diekema, and Johnson 1995). Boys learn that dominance in the group

signifies a higher rank in the hierarchy and increased social worth through status.

Conversely, the more cooperative play style and more reciprocal discourse of the girl group support the formation of connections between girls (Maccoby 1998; Thorne and Luria 1986). Girls learn that increased connectivity to others leads to greater female social worth through popularity.

Findings from previous studies suggest that the different conceptions of social worth (status and popularity) hypothesized to be learned in same-sex friendship groups are important for boys and girls in gender-specific ways. Status is especially significant for boys since male self conception is more likely to be based on personal achievement (Turner and Roszell 1994). Boys' self-esteem also increases by outperforming others (Schwalbe and Staples 1991). Additionally, boys with low status in their friendship groups have greater depression than girls of an equally low status (Ziegenhorn 1997 qtd. in Weisfeld and Wendorf 2000). However, self perceived popularity has been found to be more important to the self esteem of adolescent girls (Josephs, Markus, and Tafarodi 1992; Walker and Green 1986). Female self-esteem has also been found to be influenced more by how others view them (Schwalbe and Staples 1991).

Even though status and popularity at first appear to be distinct concepts, some researchers have suggested that they actually serve as gender-specific strategies for the same function: maintaining social connection. Whereas girls foster connections with others by relying upon intimacy and popularity, boys utilize power and status to provide reassurance of social worth and belongingness. With this reasoning, the male utilization of status in order to fit into the hierarchy of a group can be considered as a gender-

appropriate replacement for intimacy (Baumeister and Sommer 1997; Cross and Madson 1997; Lee and Robbins 2000).

### *Evaluating Worth: Social Feedback and Social Comparisons*

Boys and girls learn to evaluate their respective conceptions of social worth in different ways. Boys utilize social feedback to assess their status within the larger group. However, girls must rely on social comparisons since no objective standards exist to judge personal popularity.

Research findings support the importance of social feedback for boys and social comparison for girls. Male self-evaluation has been found to be driven more by motives of self enhancement (Ruble et al. 1993) indicating the importance of status. Additionally, males in an exercise class based their self-evaluation of athletic performance more on feedback from instructors and other students (Herrald and Lucker 1995). Conversely, women do compare themselves with other women (Loya, Cowan, and Walters 2006; Major 1994). As opposed to boys, teenage girls have been found to compare more of their personal attributes to a greater number of other individuals (Jones 2001).

### *Summary and Hypothesis*

The conceptual model developed in Chapter 2 and further elaborated upon in this chapter holds that the different interaction styles learned in the same-sex friendship groups are associated with the unique ways in which boys and girls assess their self worth and belonging. Boys' interest in dominance combined with rough play styles establish physical standards used to gauge group standing and social worth. Boys, therefore, learn to rely more on social feedback to assess their status within the group. Girls learn to value cooperation and reciprocity; however, the assessment of popularity is more difficult

since no objective or physical standards exist to judge personal popularity. Therefore, girls learn to rely on social comparisons instead of more direct feedback. To test the basic assumptions used by this model, I put forward the following hypothesis:

*Social comparison will be the main mechanism through which social integration is associated with depression for girls whereas social feedback will be the main mechanism for boys.*

## **Data and Method of Analysis**

### *Data and Measures*

Data for the qualitative analyses in this chapter are from the Identity and Social Relations Project discussed in Chapter 2. A 5 item version of the CES-D scale was included on the initial questionnaire. Participants were asked how often in the past week they had trouble eating, felt depressed, were moody, cried a lot, or were afraid of things. Students could respond with never, sometimes, a lot, or most of the time. With ‘most of the time’ coded as 3, ‘a lot’ coded as 2, etc., values on the abbreviated index could range from 0 to 15 with higher values indicating increased depression. Even though the students sampled for the interviews analyzed in this chapter did not participate in the Add Health survey, their responses are still useful in identifying the mechanisms through which the elements of social integration are associated with depression.

### *Method of Analysis*

The analyses in this chapter address the main hypothesis: social comparison will be the primary mechanism through which social integration is associated with depression for girls whereas social feedback will be the main mechanism for boys. Analyses of the transcripts were initially guided by the relevant themes, categories, and unanswered

questions resulting from a summary of the quantitative results. Of specific interest was if depressive symptoms were associated with the psychological evaluation of not being socially integrated or with the social feedback received from others and if these processes are gender-specific. As the analysis proceeded, specific themes emerged and the codes were continually reviewed and revised. A list of the final coding scheme used in the analysis is included in Appendix C.

### **Questionnaire Results**

Questionnaires completed by the participants during the initial meeting with the researcher collected basic information about demographics, grades, and recent depression (see Appendix A). Of the 19 students completing all phases of the project, the average age is 15 and 9 of the participants are boys. With the exception of one 11<sup>th</sup> grader, all participants are freshman or sophomores and 13 of the students report a GPA or grade equivalent of 3.0 or higher. The average depression score for the sample was 2.3. Only six of the participants reported depression scores over 3, and the highest score reported was a 6. Because of the small sample size, selected demographic information collected from the questionnaires is presented in Table 7.1 for each student.

### **Interview Results**

In order to investigate the gender-specific mechanisms through which social integration are associated with depression, I begin the analyses of the interviews with students' conceptions of depression to see if their understanding of the concept matches how it is utilized in the scholarly literature. I then move to an examination of the paramount importance of friends since a student's friends are a major source of feedback and social comparisons. Next, because the quality of relationships with friends has the

potential to impact social comparisons and feedback, student's ideas about both the negative and positive aspects of social interaction with their friends are investigated. Finally, the gender-specific importance of social comparison and feedback is analyzed.

### *Conceptions of Depression*

Students have a clear and accurate conceptualization of depression. When discussing their own depression or incidences of their friends' depression, students frequently cited symptoms identified by the CES-D. Students were also very candid when discussing depression and depressive symptoms during the interviews. Ray, a 16-year-old white male who had the highest depression score in the sample, described how he felt when his friends made fun of him. He said, "I guess I get kind of angry and drawn back. I probably don't talk as much. I guess there is a difference. I get depressed sometimes when I am with my friends. I try to cover that up." In addition to describing accurate symptoms of depression, Ray was very forthcoming in explaining his feelings of depression especially when his friends insulted him and made him feel "stupid."

Numerous other participants were not hesitant to offer rather intense descriptions of their depression. A 15-year-old white male, Cooper, openly discussed his feelings about being rejected by his friends and not fitting into his school. He stated, "I felt like there was very little reason for me to live, pretty much. I felt like a lot of my thoughts were really dark and desolate and kind of depressing. I think I was in a little bit of a depression." Whereas Cooper's description is similar to many other powerful descriptions of depression in the interviews, his statement does stand out in one aspect. Cooper is the only student who explicitly discussed suicide. Other students stated that

depression lasts for a relatively short amount of time, it is a normal experience during the teen years, and everyone goes through the experience at one time or another.

Whereas boys and girls had similar conceptions of depression, gender differences exist in the themes running through their accounts concerning depression. As illustrated in the examples above, boys' discussions about depression commonly included rejection by their friends or not fitting into school. Girls were more likely to mention depression in relation to being ridiculed at school or as a result of a lacking physical attractiveness.

Ava, a 14 year old white female, stated that if students were being made fun of at school, they would "be a lot more depressed." Similarly, Romina, a 15 year old Hispanic female who had the highest depression score of all girls in the sample, stated that if students were ridiculed at school, they would have lower self esteem and concentrate less on their school work.

Many of the other girls in the sample expressed that not meeting accepted ideas of physical attractiveness is associated with depression. Sylvia, a 15-year-old Hispanic female discusses how she believes appearance affects both self-esteem and depression:

Because a lot of it is looks. And how you look physically and I guess that society has always taught us that if you don't look good physically then you are not accepted by every body... And emotionally, if you are not...if you don't keep telling yourself, reminding yourself that you should just embrace who you are, then you are going to start to believe that. So, your self esteem starts to go down and you start feeling bad about yourself and you start getting depressed.

Cathy, a 14 year old female, stated that appearance can also influence popularity. She believes that a girl's appearance can make her insecure and shy, which in turn affects her popularity. Whereas girls commonly discussed depression in relation to physical attractiveness, none of the boys mentioned physical appearance in relation to depression.

### *Foremost Importance of Friends*

The considerable importance of friends for numerous aspects of teenage life was a ubiquitous finding in the interviews for both boys and girls. Friends are everything to the respondents. Whereas many students expressed a dislike of school work and the pressure associated with academic achievement, they enjoyed going to school in order to be with their friends. All participants mentioned the significance of their friends and most included pictures of their friends on their 'who I am' collages to indicate that their friends are an important component of their identity.

Extreme feelings of closeness with friends were mentioned by many students including Christian, a white, 15-year-old boy, who said, "So, I love my friends. Obviously, everyone says that. –It's like a main thing, but it's true. Because, I don't know. I like being really close to my friends. I love talking and I like sharing things. So I like... I don't know. I have a lot of friends, and we have a lot of friends." A similar sentiment is echoed by Ava, who explained, "I like to have friends that aren't willing to judge me on just how I look. They go by my personality instead, because they are stronger friends." Christian and Ava's statements are illustrative of the two most commonly occurring themes in the interviews regarding friendship: the importance of intimacy and acceptance.

Most students believe that having close and trustworthy friends is a necessity and state that friends greatly influence their everyday life. However, some students went even further and declared that their friends have a larger influence on their lives than their own parents. Romina explains, "At this point in my life, whatever my parents will do, won't really teach me anything more. Now, I take off of my teachers or my friends that

are older for support, advice and ideas... I guess my friends right now, have the biggest impact on me.” Students in the sample were very aware of the essentialness of friends. Nonetheless, they also acknowledged that friendship has positive and negative features.

#### *Positive and Negative Aspects of Social Integration with Friends*

Students had very specific ideas concerning why friendship has positive benefits. Of particular interest for some students was how others evaluate you based on the number of friends that you have. Madeline, a 15 year old white female, states:

How many friends you have is always something. That’s one. I know people get judged on -- especially (on) how many people you see walking with them in the hall and stuff. I mean, that’s not even a big deal, but I’ve seriously been... This girl, she’s always like, “Oh, my god! That guy never walks with anyone. He’s such a loser!”

Considering that Madeline believes people think more highly of individuals who have more friends, her response illustrates a social benefit of having friends.

Social benefits were commonly mentioned by students in the sample; however, others talked about the emotional and psychological benefits associated with having friends. These respondents identified involvement with their friends as sources of self-assurance and stress-relief. When asked why a hypothetical student would be more likely to struggle in school and have poor self esteem, Ray said, “I think [that] kid doesn’t have as many friends. I honestly...in middle school I didn’t have a whole lot of friends and I was very unconfident about myself.” Furthermore, Cathy details how her friends serve as an escape from family “tension”:

I feel a lot of tension between me and my mom sometimes. And it’s like I love going to school. I love being at school.... I do want to be at school and I do want to be with my friends as much as I can, because I don’t have the tension with them. It’s always just a happy time with them. I don’t ever have to worry about getting in an argument that’s going to cause drama or anything.

Ray and Cathy's responses illustrate very typical explanations of the positive psychological benefits associated with having friends.

Numerous positive social and psychological benefits of social integration with friends were discussed by students in the interviews; however, participants also discussed negative aspects of friendship. Many students expressed a particular concern about over-involvement with friends. Christian explains how friends can detract from school:

Like, if there's a kid who's left out all the time, I would think they would be less likely to do well in school. Just because people need human interaction. They need to have friends. It's a vital part of living, I'd say. But also, if you're goofing off all the time and always partying and stuff, you also couldn't do well in school, because you're not going to be focused on the schoolwork you do. You have to find a balance between having fun with your friends and focusing on schoolwork.

Similarly, Cooper describes how having too many friends can negatively alter someone's true personality and the sincerity of their behavior:

If someone has tons of friends, like over a hundred or something, they are probably going to feel fine with themselves. Or, to the contrary, they could actually feel like they are not themselves, because they might act a different way than they usually would just so that people would accept them, instead of just acting themselves.

Christian and Cooper's responses regarding the negative aspects of social integration with friends are representative of the concerns expressed by many students. Participants are aware that, whereas friends are important, obligations to friends can contradict with other school or family responsibilities and can even lead to constraints on personal autonomy. Respondents stress the need to balance friends with doing well in school, maintaining family relationships, and being true to ones' self.

### *Social Comparison and Feedback*

Since the preceding results illustrate that students in the sample have an adequate understanding of depression and that friends are important to boys and girls, I now examine the gender specific mechanisms through which social integration is associated with depression. Analyses of the interviews indicate that the use of social comparison and social feedback is not completely gender-exclusive since examples of each can be found in both boys and girls' responses. However, more girls mentioned aspects of social comparison whereas a greater number of boys discussed the importance of social feedback. And when girls discussed social feedback, they were able to distinguish much more subtle forms of feedback than the boys.

Girls in the sample compared themselves to numerous other people. Girls discussed how they measured up to their sisters, brothers, friends, classmates, celebrities, and notions of beauty presented by the media. Girls also compared themselves to others on a variety of different attributes including grades, appearance, and personality.

Madeline explained why she wished she could be smarter:

My sister and I, we're really, really close, but she is kind of smarter than me sometimes. Well, she gets better grades and stuff, and so it kind of makes me feel like I have to be that, too, because my family is really close. It's kind of like comparing the two of us. So it's kind of hard to be part of the family, be so close, and then not get as good of grades. So it's frustrating.

Likewise, when Katina, a 17 year old white female, was asked if she ever felt pressured to be different, she stated, "Yeah. A lot of the times like, you see these pretty super models or models that are really pretty and thin and look really nice. And you are like, I wish I was like that." Social comparisons, however, are not always associated with negative psychological outcomes for girls. Cathy discusses how she was home schooled

and was feeling anxious and depressed about returning to public school. On the first day of school, she describes how she began feeling better, “Just seeing the kids around me. Like, some of them were extremely dumb. And I was like, they passed eighth grade. I’m gonna be okay here. So that helped a lot.” Comparisons like these are very common in girls’ interviews and appear less often in boys’ responses. Additionally, these specific examples also illustrate the association between social comparisons and psychological outcomes. Social comparison served to increase frustration for Madeline, whereas comparing herself to the students around her helped to alleviate Cathy’s anxiety.

Besides having a penchant for social comparisons, girls also appear to be particularly aware of others’ evaluations. When asked about how they knew when others disapproved of their appearance or behavior, numerous girls mentioned ‘the look.’ Juanita, a 15 year old Hispanic female clarifies the concept by explaining, “If I’m in basketball shorts and a t-shirt or whatever at school one day,... [I] do get looks sometimes, just kind of like, Oh, why are you wearing that? Nobody really tells anybody, Oh, I can’t believe you’re wearing that.” Girls most commonly discussed ‘the look’ in regards to wearing unusual clothes or being overweight. Respondents acknowledged the subtlety of ‘the look’; however, all of the girls in the sample understood that it is a form of disapproval. Whereas only one boy talked about ‘the look,’ it was mentioned by more than 6 of the female students.

Although girls discussed social comparisons and mentioned subtle feedback, more boys in the sample talked about the direct feedback that they receive from others. Boys specifically discussed the feedback from parents, teachers, and friends concerning their grades, sports performance, and other aspects of achievement. Miguel, a 16 year old

Hispanic male, described how he knew that his teachers were concerned about his progress in class:

I know a lot of teachers that like me. Like, they think I'm a good student and stuff. They wonder why I do so bad... They're like, "Why are you slacking off? You know you could do the work. Why are doing that when you are just about done with it?" ... I hear it a thousand times a day.

Miguel's response is representative of how numerous boys in the sample described the frank communication that occurs between them and others.

Whereas discussion of feedback related to achievement was common, some boys also talked about how social feedback can be utilized to inform people that they are not fitting into a peer or friendship group. When explaining how a student would know that he was facing rejection from a group, Cooper stated that group members tell him to his face that he should leave. Responses indicate that numerous boys in the sample are aware that social feedback can be a means of judging your integration into a group.

Many boys also discussed their emotional reactions to others' feedback. These reactions included negative emotions such as anger, worry, and anxiety. However, direct feedback was also described as a source of encouragement and motivation. Justin, a 15 year old Hispanic male, states, "I need to feel like I'm actually doing something. If I'm just doing it, working really hard, but no one ever says I'm doing good at anything, then I'll probably not try as hard." Justin's response is illustrative of the importance that many boys in the sample place on direct feedback as well as the psychological consequences associated with not obtaining this feedback. For boys, direct communication can evoke strong emotional responses such as anger, but can also serve as positive reinforcement and be a source of motivation.

Interview analyses indicate gender differences in communication styles with boys being more direct and girls being more subtle. This detail was commented upon by some of the students in the sample. Juanita recognized boys' directness:

A lot of the jocks at my school are kind of real vocal with their opinions. They're like, "Oh, no. That's ugly," or, "That's stupid. Dah-dah-dah." And so, at my school, they would probably tell him whatever they thought of it, whether they thought, "Oh, man, that's cool," or if they thought it was dumb.

However, boys also discussed the subtlety of girls. Miguel describes differences in how boys and girls let their peers know that they do not fit into their friendship groups, "[Girls will] be like discreet with it. Well, not discreet, but they will tell you without you really knowing, you know, like, being nice about it. Like, being mean to you in a nice way. Guys, we'll tell you straight up." Because students comment on the gender differences in communication styles, at least some of the sample can be assumed to recognize that gender difference exist in styles of communication.

In all, results indicate that students in the sample have an adequate understanding of depression and that friends are very important to boys and girls. However, participants note that social integration with friends has both positive and negative aspects. Analyses also indicate that girls are more likely to use social comparison whereas boys utilize more direct feedback to make sense of their social context. The implications of these findings as they pertain to the conceptual model and past research results will now be discussed.

## **Discussion**

Findings from the interview analyses correspond with several key elements of the proposed conceptual model. Even though examples of social comparison and social feedback could be identified in both boys and girls' responses, more girls mentioned

instances of social comparisons whereas more boys discussed the importance of social feedback. Also, results support the existence of gender-specific conceptions of worth and social integration since aspects of status are important to the boys in the sample whereas the girls are more concerned about popularity. And finally, student responses illustrate the associations between social comparison, social feedback, and psychological measures such as anger, frustration, worry, and anxiety. Considering the totality of these findings, the hypothesis advanced in this chapter stating that social comparison and social feedback serve as the main mechanisms through which social integration is associated with depression for girls and boys, respectively, is supported.

Consistent with previous research findings (Jones 2001; Major 1994), numerous girls in the sample utilized social comparisons and compared more of their attributes to a greater number of people than did boys. However, girls also discussed the recognition of social feedback from others and were able to distinguish much more subtle forms of feedback than the boys. Girls were very concerned about the evaluations of others and discussed receiving subtle, disapproving feedback from others in the form of “the look.” Additionally, the importance of popularity as a conception of worth and integration is substantiated since girls most commonly mentioned being evaluated and receiving “the look” in regards to fashion or their weight: aspects of popularity (Becker and Luthar 2007; Holland and Eisenhart 1990).

Analyses also illustrate that social comparisons related to popularity are associated with various psychological outcomes for girls. During the interviews, numerous girls compared themselves to others and then mentioned consequent feelings of frustration, anxiety, and anger. Girls were also more likely to discuss depression

resulting from not achieving an accepted idea of physical attractiveness or being made fun of at school. Again, the importance of popularity for girls is illustrated since unattractiveness and ridicule indicate fewer connections and decreased social integration.

Compared to girls, more boys in the sample discussed the social feedback that they received from friends, parents, coaches, and teachers. Many examples of the feedback discussed by the boys concerned aspects of achievement (sports performance, grades, etc.) or group integration. In the same ways that girls utilized social comparisons, boys appeared to use feedback as a means to verify aspects of personal achievement or integration into a group. Consistent with previous research indicating that achievement (Schwalbe and Staples 1991; Turner and Roszell 1994) and group standing (Adler, Kless, and Adler 1992; Ziegenhorn 1997 qtd. in Weisfeld and Wendorf 2000) are important aspects of status, the findings in this chapter support the significance of status as a conception of social worth and social integration for boys.

Analyses also indicate that receiving social feedback about aspects of status is associated with various psychological outcomes for boys. In response to being told that they were not attaining a satisfactory level of performance or fitting in with their friends and peers, boys described reacting with negative emotions such as depression, anger, worry, and anxiety. However, direct feedback was also described as a source of encouragement. Some boys reported that they did not feel motivated if they did not receive feedback from others.

### **Implications for Theory**

The findings presented in this chapter have both practical and theoretical implications. Identification of the gender specific mechanisms through which social

integration is associated with depression is a fundamental step in identifying the social psychological processes associated with gender reactivity and has the potential to improve programs and initiatives aimed at depressed teens by suggesting more effective gender-specific approaches. Additionally, any theory that addresses gender differences in depression can offer more robust explanations by accounting for the gender differences in the utilization of social feedback and social comparisons as well as the respective importance of status and popularity. Results indicate that boys are more likely to rely on social feedback, but girls utilize social comparisons and can detect more subtle feedback from others. Finally, whereas feedback and social comparisons can be associated with negative psychological outcomes, findings suggest that theoretical explanations linking evaluations of social integration with depression should also consider how the absence of beneficial feedback and social comparisons can also be associated with poor outcomes. Considering that some responses indicate a lack of feedback can be associated with decreases in motivation, this could be especially relevant for boys.

Table 7.1: Questionnaire Data for Students Participating in School Interviews

Alias <sup>1</sup>	Sex	Age	Grade	Race	Grades or GPA	Depression
Romina	F	15	10	Hispanic	A / B	5
Sylvia	F	15	10	Hispanic	3.3	1
Katina	F	17	11	White	B / C / D	4
Althea	F	15	9	Black	A / B	2
Ava	F	14	9	White	B	1
Cathy	F	14	9	White	B	3
Lizzie	F	15	10	White	3.7	4
Olivia	F	15	9	Black	A / B	3
Miguel	M	16	10	Hispanic	B / C	1
Christian	M	15	9	White	2.9	4
Madeline	F	15	9	White	3.7	2
Ray	M	16	9	White	B / C	6
Ali	M	17	10	Other	3	0
Justin	M	15	9	Hispanic	A / B	1
Cooper	M	15	9	White	B / C	1
Joshua	M	15	9	White	3.5	2
Wes	M	15	9	White	A / B	0
James	M	16	10	Hispanic	2.5	0
Juanita	F	15	9	Hispanic	4.0	4

Notes: <sup>1</sup> The names of the participants have been changed to protect their anonymity.

## **Chapter 8: Discussion and Conclusions**

### **Introduction**

Of the numerous social factors associated with depression and anxiety, the gender gap in depression is one of the most robust findings in mental health surveys (Mirowsky and Ross 2003). This gender gap in depression emerges during adolescence with girls being twice as likely as boys to be depressed by late adolescence (Kessler et al 1993; Nolen-Hoeksema 2000). The initial appearance of the gender difference in depression draws attention to the stage of life in which it occurs. Boys and girls develop increasingly social orientations during adolescence. They have more social contact centered around the high school context (Goodman et al. 2003; McNeely, Nonnemaker, and Blum 2002), spend more time with friends (Brown 1990), and become involved with romantic relationships (Joyner and Udry 2000). However, just as the teen years can provide many opportunities for the increased social integration associated with positive mental health outcomes, possibilities also exist for teens to feel alienated and lonely if they do not fit in at their schools or with their friends.

The purpose of this dissertation was to investigate the social nature of the gender difference in teen depression by studying the association between depression and social integration at the institutional, group, and personal levels for boys and girls. Taking a developmentally appropriate approach to social integration, I focused on fit within the normative high school context, friendship group position, and involvement in romantic relationships. Based on a conceptual model derived from the strong theoretical assumptions of past literature, the starting point of this research was that the depression

of girls, compared to boys, would be more reactive to social integration in positive and negative ways (social integration was conceptualized as a moderator). However, competing viewpoints were also considered to determine whether this traditional assumption masked greater reactivity for boys at these three distinct levels.

### **Summary of Main Findings**

The analyses in this dissertation utilized the school, network, and personal data of the Add Health survey, supplemented by in-depth interviews conducted with students in an Austin Independent School District high school. Results from the statistical models in the three quantitative chapters indicate that girls have higher depression scores, on average, than boys. Yet, this basic pattern varies in relation to social integration at the institutional, group, and personal levels.

At the high school level, the traditional assumption of greater female vulnerability to a lack of integration actually appears to mask greater reactivity for boys (Chapter 4). A better fit within the normative context of the school is not associated with greater decreases in depression for girls. Instead, a larger gap exists in the depression scores between boys who have GPAs and friendship involvement scores above the averages of the school and boys who have GPAs and friendship involvement scores similar to the school averages. These results illustrate that not fitting in to the normative context of the school is associated with greater depression for boys.

Likewise, the depression levels of both boys and girls are shown to be equally sensitive to social integration within the friendship group (Chapter 5). Greater social integration into the friendship group is associated with decreases in depression, regardless

of gender. The traditional assumption of greater female vulnerability to a lack of integration does not hold at the friendship group level.

At first glance, boys and girls' depression also appears equally sensitive to involvement in romantic relationships (Chapter 6). For example, involvement in an ongoing, serious, sexual relationship is associated with increased depression for both boys and girls. However, the connection between several aspects of romantic relationship break-ups and depression did differ by gender. Whereas experiencing greater numbers of romantic relationship break-ups between waves is associated with increased depression for girls, girls who were involved in a serious, non-sexual relationship that ended between interview waves actually had lower depression.

These quantitative analyses in chapters 4, 5, and 6 illustrate unexpected gender differences in depression at the three distinct levels of social integration. Girls' depression is not more vulnerable to lower levels of social integration at all three levels. Boys are actually more reactive to a lack of social integration into the normative context of the school. Boys and girls' depression is equally sensitive to integration within the friendship group, and girls' depression is more reactive to aspects of romantic relationship break-ups.

Although the quantitative analyses indicate associations between social integration and depression, qualitative results better explain the gender-specific mechanisms through which social integration is associated with depression. Analyses of the interview data in Chapter 7 generally support key elements of the proposed conceptual model indicating social comparison and social feedback as the main mechanisms through which social integration is associated with depression for girls and

boys, respectively. Results support the existence of gender-specific conceptions of worth and social integration since aspects of status are important to the boys in the sample whereas the girls are more concerned about popularity and relationship maintenance. Additionally, student responses illustrate associations between social comparison, social feedback, and psychological outcomes such as depression, anxiety, and frustration.

### **Implications for Theory**

#### *Social Integration as a Moderator*

Because the analyses in the three quantitative chapters do not indicate a generally greater female vulnerability to lower levels of social integration, certain facets of the theoretical perspective emphasizing that men and women have different reactions to social integration (social integration as a moderator) are called into question.

Nonetheless, the perspective still remains beneficial since an emphasis on different gender-specific reactions to social integration introduces a more nuanced idea of gender reactivity to social integration and focuses on the disparate ways that men and women relate to those with whom they have a relationship.

The findings in this dissertation can be utilized to suggest specific modifications to improve particular aspects of this perspective. As noted in Chapter 1, social integration can be conceptualized in different ways and assessed in relation to an institution, social network, or another individual. Given that findings suggest boys and girls have different conceptions of social worth and may be oriented to different contexts of social integration, specific conceptualizations of social integration must be carefully articulated and assessed in relation to the particular contexts that are relevant and meaningful to the participant. Girls cannot be said to be more reactive to social

integration within all contexts. Second, findings regarding reactivity to social integration can be influenced by certain factors related to specific stages in the life course.

Considering that adolescence is a stage in which boys and girls develop increasingly social orientations, social integration –especially within the friendship group– is very important for both boys and girls in these analyses. Therefore, differences in reactivity could be smaller for boys and girls during the teen years as a function of similarities in the intensity and importance of social integration for all teens. Third, much of what has been learned about social integration and gender differences in depression is from studies using adult samples and is based largely on differences in lifelong gender socialization (Gilligan 1982; Marini 1988). Considering that teens, especially those who are younger, have not yet realized the full effects of adult gender socialization, social integration as a moderator may be a more accurate explanation for adults.

### *The Conceptual Model*

Although the quantitative analyses provided only limited support for the ‘social integration as a moderator’ perspective, the qualitative results provided more support for the conceptual model. Analyses of the interviews in Chapter 7 indicate the existence of gender-specific conceptions of social worth (status and popularity) as well as their associations with psychological outcomes. Additionally, analyses in Chapter 4 illustrate that boys’ depression is more reactive to a lack of social integration at the high school level. These findings further support the importance of status for boys and are compatible with the idea that the male quest for status in the hierarchy encourages boys to focus on social integration into larger contexts (Baumeister and Sommer 1997), such as the school level. Conversely, results from Chapter 6 indicate the importance of the

personal level for girls since girls' depression is more reactive to aspects of romantic relationship break-ups.

Support for the gender-specific mechanisms through which social integration is associated with depression is also provided by the analyses in this dissertation. However, because the importance of social feedback and social comparison could only be implied by the quantitative analyses, the qualitative analyses in Chapter 7 must be relied upon for a more thorough examination. More girls mentioned aspects of social comparison whereas a greater number of boys discussed the importance of social feedback. Girls also distinguished more subtle feedback from others and were particularly aware of other's disapproval. Nonetheless, not all reactions to the feedback of others were negative. Some boys described direct feedback as a source of encouragement and motivation whereas some girls reported that social comparison helped to reduce anxiety in certain situations. These findings suggest that a lack of feedback can be associated with negative psychological outcomes, especially for boys.

### **Limitations**

Although this dissertation benefits from the combination of quantitative and qualitative research methods to address social integration and gender differences in adolescent depression, limitations specific to each type of analysis must also be addressed. First, specific limitations for each statistical model are discussed in their respective chapters; however, a common issue for all of the quantitative analyses concerns how relevant the measures of social integration are for the teens, themselves. Since the survey data were already collected, variables could only be chosen from those available. Ideally, teens would be interviewed and asked what they considered to be

important aspects of social integration before the study was conducted. Second, the statistical models used in the three quantitative chapters could not establish causation and only identified associations between social integration and depression. Even though I was guided by the conceptual model, interpretation of the quantitative results required a good amount of speculation. Third, this study is probabilistic. Results indicate a greater likelihood of depression for boys and girls based on aspects of social integration. Whereas gender patterns are observed, individual variations can exist for numerous reasons. Fourth, the students interviewed did not participate in the Add Health survey. Although the interviews are useful in identifying the mechanisms through which the elements of social integration are associated with depression, the responses are not technically from the same sample used to establish the initial associations between integration and depression. And finally, aspects of popularity and status were somewhat difficult to address in the interviews. Students would regularly make contradictory statements such as claiming that popularity was not important and then later bemoan the fact that more people in the school did not know them. Responses indicated that many of the students cared about popularity and status; yet, the frank discussion of social worth seemed taboo. Assessing students' true feelings about subjects that are not freely discussed can be complex.

### **Future Directions**

The analyses in this dissertation help to elucidate gender differences in the association between social integration and depression during adolescence. However, in the course of addressing the research aims of the study, further questions became apparent. These additional questions serve as productive areas of future research.

All of the quantitative analyses indicated an association between the non-Hispanic Asian variable and increased depression. Supplementary analyses identified a significant interaction effect between the Asian and female variables illustrating that Asian girls are more likely to be depressed than white girls. These results illustrate the need to further investigate the relationship between race and depression during the teen years. Because of small sample sizes, Asians are often overlooked. However, future research is necessary to determine why Asian females are more likely to be depressed than whites.

Another area of future research involves the association between female depression and aspects of romantic relationship break-ups. Women have been found to be at a higher risk of depression when relationships end (Nolen-Hoeksema 2001). This is supported by results in Chapter 6 since increased depression for girls is associated with reporting a greater number of romantic relationships ending between survey waves. However, analyses also illustrate that girls who had experienced the break-up of their last serious, non-sexual relationship actually had lower depression than girls not involved in any romantic relationship between waves. This result indicates the need to consider the specific factors related to an individual's position in the life course. As discussed in Chapter 6, teen girls can validate their popularity by having a serious relationship. But because the relationship ended, she could be free of current pressures to have sex: a source of much distress for female teens (Joyner and Udry 2000). Further research is necessary to determine the importance of relationships and break-ups to female popularity during the teen years and how the sexual aspects of these relationships are reconciled with expectations to remain chaste.

A final area of future research concerns the trajectories of depressed teens into adulthood. Past research indicates that depression during adolescence can have life-long consequences for teens, including associations with major depression in adulthood (Dunn and Goodyer 2006). Because more detailed longitudinal surveys are available, researchers can better see the affects of teen depression on outcomes later in life. However, these thorough surveys provide enough information so that associations between teen depression and adult outcomes should not be the ultimate goal. The changing nature of social integration over the life course and its associations with depression are also important to consider. As discussed, measures of social integration that are important for adults do not apply to the majority of adolescents since many do not have a full time job, are not married, and do not have children. Likewise, adolescent measures of social integration such as friendship groups and extracurricular activities are not as relevant for adults. Future research needs to investigate what happens to depression levels as aspects of social integration during the teen years develop into relevant adult measures of social integration. For instance, future research can address topics such as how the transition to marriage and movement away from same-sex friends are associated with depression.

## **Conclusions**

This dissertation focuses on the differential reactivity of boys and girls to social integration at the institutional, group, and personal levels. General results indicate that a better fit within the normative context of the school and greater integration within the friendship group is associated with decreased depression whereas involvement in a romantic relationship is associated with increases in depression. However, gender

differences exist in depressive reactivity. Boys are more reactive to a lack of social integration into the normative context of the school. Boys and girls' depression is equally sensitive to integration within the friendship group. In addition, girls' depression is more reactive to aspects of romantic relationship break-ups. Therefore, the traditional assumption stating that girls' depression will be more reactive to social integration in positive and negative ways at all levels is not supported.

Although the quantitative analyses are valuable in identifying the associations between depression and social integration into the three distinct contexts, qualitative analyses address why these gender differences exist. Social feedback and social comparison were identified as the gender-specific mechanisms through which social integration was associated with depression. Boys tend to rely on social feedback whereas girls are more likely to use social comparisons and are able to distinguish more subtle forms of feedback than boys. In investigating the origins of gender differences in depression during adolescence, these mechanisms warrant special attention.

## **Appendix A: Interview Guide and Questionnaire**

### **Interview Guide Identity and Social Relations Project**

#### **General Instructions:**

- 1) Before starting the interview, inform the student that the interview will be recorded but that his/her name will not be used.
- 2) Turn on the recorder and state your name, the ID number of the student being interviewed, the date of the interview, and the place of the interview.
- 3) This guide is suggestive. There is no need to follow the questions (or the question order) verbatim, but you do need to cover the substance of each section. Feel free to follow up questions and to let the student follow up questions, but be sure you cover the six main points of this interview guide.
- 4) After the completion of the interview, give the student the Data Release Consent Form (attached), explain what this form entails, and have the student sign this form.
- 5) Thank the student for his/her time and hand over the \$50 gift card.
- 6) Fill out the debriefing form for this interview.
- 7) Return the “Who I Am?” collage, audio cassette, and debriefing form to the PRC and let Belinda know that the interview has been completed.

#### **Part I. Who am I Discussion**

Have the student show you his/her collage and explain what it means. This can be followed by a discussion of the web page if the student has one. The general purpose of this introduction is to get the student to trust you, more comfortable talking to you, and in tune with the whole topic of personal identity. If the student is slow to respond, try the following prompts. If the student is more open, then let him or her go, but be sure that these general points are covered.

1. Why did you take each of these pictures? What do you want these pictures to tell me about yourself?
2. Tell me about this collage? What do the different pieces of the collage represent? Why did you pick these pieces?

3. Your Web page is very interesting. Does it say a lot about you? Is it a personal statement, like this collage and like these photos? What is that statement?

4. Based on what is here, who are you?

### **Part II. Actual / Ideal Discrepancy**

After completing the collage/web page discussion, you should have a good idea of who the student thinks that he or she is (their identity). Now, you should lead them toward a discussion of identity conflict. Specifically, we want to know if there is any conflict between this personal identity and who they want to be (actual vs. ideal identity). If the student claims no such conflict or discrepancy, then ask about their friends. We need them to give their thoughts about what such conflict entails, from the vantage point of themselves or of their friends.

Now that you have told me who you are, I want to ask you some questions about how who you are fits in with the world around you. Sometimes, teens feel that who they are is not who they want to be.

1. Do you ever feel that way? Do any of your friends ever feel that way?
2. If you (or your friend) feels this way, where do you think that feeling comes from?

### **Part III. Actual / Ought Discrepancy**

Now, we want to move away from the self to the social, namely the potential conflict that occurs when their personal identity is not what others want them to be. This is the meat of the interview. We want to know why teens might feel this way. Again, if the student claims no such conflict or discrepancy, then ask about their friends. Someone they know feels this way. If the interview is going to be about a friend's conflict, then change the questions below accordingly.

Sometimes, teens feel that who they are is not who others want them to be.

1. Do you ever feel that way? Do any of your friends ever feel that way?
2. If you feel this way, is it in relation to your parents? Other teens at school? How about things you see on TV or read in magazines?
3. How do you know that who you are is not what others want you to be? In what ways do other people let you know? If these other people do not let you know directly, how do you figure it out? What is the most important way that you figure out that who you are is not what others want you to be?

4. What happens when you feel that who you are is not what your parents want you to be but is what other teens at school want you to be? What about if who you are is not what other teens at school want you to be but is what your parents want you to be? What about if who you are is not what you think the media is telling you to be but is what your parents or other teens at school want you to be? Which type of agreement between who you are and who others want you to be is most important?

#### **Part IV. Potential Implications of Self Discrepancies**

Pretty much every teen has these feelings, and adults think they are just part of growing up. We want to assess whether it is more serious than that? Does it affect their psychological development or, especially, their schooling? The purpose of this section is to figure this out. Be sure to adjust these questions to the kind of self-discrepancy (actual/ideal or actual/ought or both) that the student has already mentioned. Again, also adjust these questions if you are talking about the student's friend as opposed to the student.

1. If you feel that who you are is not who you want to be or who others want you to be, how do you react to that?

-Does that affect how you feel about yourself?

-Does that make you change who you are?

-Does that make you change who the others in your life are?

-Does that make you like or value these others in your life less?

-What other things might you do to change or deal with this situation?

2. Is it harder to go to school when you feel that who you are is not who you want to be or who others want you to be? Are there ways that these feelings might hurt your school career?

#### **Part V. Potential Protections Against Self Discrepancies**

At this point, we want to take a more positive route. The basic issue is resilience. How do some kids survive this experience? Specifically, probe about actual relationships or activities (concrete things) that might help. Eventually, we want to go back to quantitative data (like Add Health) and test this.

Imagine two teens who feel that who they are is not who they want to be or who others want them to be. What if I told you that one of these students still felt pretty good about

her/his life and still did well in school but that the other one really did not like herself/himself so much and was struggling in school.

1. What do you think would account for this difference between these two teens in the same situation? Do you think that the one doing OK has something that the one not doing so great does not? Like what? Be specific.
2. If you were in this situation of feeling out of step with your ideal self or what others want you to be, what would be the most important factor in explaining why these feelings would disrupt your life or your school work? What would be the most important factor in explaining why these feelings would not disrupt your life or your school work?

### **Part VI. General Concluding Questions**

Finally, we need to elevate this discussion to a more general topic, namely that how you do in school is about a whole lot more than IQ. This is the section funded by WT Grant, which is particularly interested in how social relationships (parents, peers, teachers) affect kids' trajectories through school curricula.

From what you have told us, it seems like the decisions you and other teens make about schoolwork (e.g., what classes to take) have a lot to do with who you know and the advice you get from others. Is that true? OK, let's talk about that a little.

1. When you are deciding what classes to take for the next school year, who are the three most important people who have influence on your decision-making (prompt if no mention of peers)? How do they influence you? Is it by talking to you? It is because you know what they think?
2. Do these people tend to agree or disagree about your schoolwork? In other words, do their influences on you match or do they contradict each other? If there is any contradiction between these people in their influence on you, how do you deal with that or resolve that?
3. Let's say that this year, your school tells you that taking math or science is completely voluntary. What would be the biggest reason that you would take these classes even if you did not have to? Who would be the biggest influence on this decision?

**Questionnaire**  
**Identity and Social Relations Project**

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**STUDENT QUESTIONNAIRE**

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*This questionnaire is designed to give us general information about your background. Thank you for taking the time to answer all of these questions.*

<i>For internal use only</i>
Student ID#: _____
Date Administered: ____/____/____ MM DD YYYY
Interviewer: _____

1. What sex are you?  
1  Female  
2  Male
2. How old are you? \_\_\_\_\_
3. What grade are you in?  
1  9th  
2  10th  
3  11th  
4  12th
4. What is your race (you can check more than one box)?  
1  American Indian or Native Alaskan  
2  Asian  
2  Hispanic  
4  Black or African American  
5  Native Hawaiian or other Pacific Islander  
6  White  
7  Other
5. If you said that your race is Hispanic, what is your Hispanic background (e.g., Mexican-American)? \_\_\_\_\_
6. If you said that your race is Asian, what is your Asian background (e.g., Chinese-American)? \_\_\_\_\_
7. Were you born in the United States?  
1  Yes  
2  No
8. Were your parents born in the United States?  
1  Yes  
2  No

**9. Do you live with both of your biological (or birth) parents?**

- 1  Yes
- 2  No

**10. If you do not live with both of your biological parents, tell us the people that you do live with**

---

**11. How far in school did your mother (female guardian) go?**

- 1  Less than a High School Degree
- 2  Graduated from High School (or Got a GED)
- 3  Attended Some College
- 4  Graduated from College
- 5  Got a Post-College Degree (e.g., Law Degree, Ph.D.)
- 6  Don't Know

**12. How far in school did your father (male guardian) go?**

- 1  Less than a High School Degree
- 2  Graduated from High School (or Got a GED)
- 3  Attended Some College
- 4  Graduated from College
- 5  Got a Post-College Degree (e.g., Law Degree, Ph.D.)
- 6  Don't Know

**13. What is your current grade point average in school? \_\_\_\_\_**

**If you do not know, describe your grades so far in school (e.g., mostly As, Mostly As and Bs, etc.).**

---

**14. Are you currently enrolled in a math course?**

- 1  Yes
- 2  No

**If so, what is it called? \_\_\_\_\_**

**15. Are you currently enrolled in a science course?**

- 1  Yes
- 2  No

**If so, what is it called? \_\_\_\_\_**

**16. Have you ever been diagnosed with a learning disability?**

1  Yes

2  No

**If so, what is it called?** \_\_\_\_\_

**17. Are you a member of a sports team at school?**

1  Yes

2  No

**If so, what is it (you can name more than one)?** \_\_\_\_\_

**18. Are you a member of a school club?**

1  Yes

2  No

**If so, what is it (you can name more than one)?** \_\_\_\_\_

**19. How often was each of the following statements true in the last week. Circle one for each line.**

	Never/Rarely	Sometimes	A Lot	Most of the Time
a. You had trouble eating	0	1	2	3
b. You felt depressed or blue	0	1	2	3
c. You were moody	0	1	2	3
d. You cried a lot	0	1	2	3
e. You were afraid of things	0	1	2	3

**20. Do you have your own personal web page?**

1  Yes

2  No

**If so, can we look at it?**

1  Yes

2  No

**If so, where can we find it?** \_\_\_\_\_

**Thank you**

## Appendix B: Add Health Adaptation of CES-D Questions

The dependent variable is an index created by summing the responses from the following questions. Respondents were asked how often each item was true during the past seven days: 0 -never or rarely; 1 -sometimes; 2 -a lot of the time; or 3 -most of the time or all of the time.

1. You were bothered by things that usually don't bother you.
2. You didn't feel like eating.
3. You could not shake the blues, even with help from your friends and family.
4. You felt that you were just as good as other people. (reverse scored)
5. You had trouble keeping your mind on what you were doing.
6. You felt depressed
7. You felt you were too tired to do things.
8. You felt hopeful about the future. (reverse scored)
9. You thought your life has been a failure.
10. You felt fearful.
11. You were happy. (reverse scored)
12. You talked less than usual.
13. You felt lonely.
14. People were unfriendly to you.
15. You enjoyed life. (reverse scored)
16. You felt sad.
17. You felt that people disliked you.
18. It was hard to get started doing things.
19. You felt life was not worth living.

## **Appendix C: Qualitative Coding Scheme**

The following codes were used to analyze the Identity and Social Relations Project interviews:

- 10 Depression
- 20 Importance of Friends
- 30 Evaluations of Others –General
  - 31 Looks and Appearance
  - 32 Encouragement from Parents and Peers
  - 33 Comparisons and Feedback to/from Others
  - 34 Ideas about Popularity / Status / ‘Coolness’
- 40 Fitting into School –General
  - 41 Loneliness
  - 42 Personality Change during the School Year
  - 43 The Importance of Being Yourself
  - 44 Cliques
  - 45 Importance of Clubs, Sports, Activities
- 50 Romantic Relationships (Dating / Sex / Breakups)

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## **Vita**

Kurt Gore was born in Silsbee, Texas on February 7, 1973 to Renee and Rusty Gore. After completing undergraduate study in sociology at Lamar University in Beaumont and graduating Cum Laude, he was commissioned as an airborne-qualified Field Artillery officer in the United States Army. While serving at Ft. Sill, Oklahoma, he earned a Master of Education in instructional psychology and technology at the University of Oklahoma in Norman. He attended The University of Texas at San Antonio and earned secondary teaching certifications in English and sociology. During the following two years, he taught sophomore English and was the lead reading teacher at Judson High School in Converse, Texas. After earning a Master of Science in sociology from The University of Texas at San Antonio in 2003, he entered the demography program at The University of Texas in Austin.

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