The Pennsylvania State University
The Graduate School
Department of Psychology

THE COSTS AND BENEFITS OF BEING A SOCIAL BUTTERFLY:
INTERPERSONAL AND INTRAPERSONAL CORRELATES OF INDIVIDUALS WITH
FRIENDS ACROSS MULTIPLE CLIQUES

A Thesis in
Psychology
by
Nassim Ebrahimi

© 2005 Nassim Ebrahimi

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy
December 2005
The thesis of Nassim Ebrahimi was reviewed and approved* by the following:

Jeffrey G. Parker  
Associate Professor of Psychology  
Thesis Advisor  
Chair of Committee

Karen Gasper  
Associate Professor of Psychology

Janet Swim  
Full Professor of Psychology

Scott Gest  
Assistant Professor of Human Development and Family Studies

Kevin Murphy  
Professor of Psychology  
Head of the Department of Psychology

*Signatures are on file in the Graduate School
ABSTRACT

Considerable effort has recently been directed toward conceptualizing and assessing how adolescents differ in their friendship involvement, focusing mostly on representing the quality or quantity of individuals’ friendship experiences and not often the organization of friendships with respect to one another. Whereas one individual’s set of friends may be integrated into a single, close knit clique, another’s may be spread diffusely across many separate cliques. The present study examined the assets and liabilities associated with diverse versus homogenous organization of friendships across groups, thus extending past efforts to understand friendship adjustment solely in qualitative or quantitative terms. Drawing partially on theories formed within organizational psychology, we predicted that individuals who prefer to be “social butterflies” with involvement in many non-overlapping friendships would enjoy added protection from social (but not necessarily emotional) loneliness and display greater interpersonal competence. We examined but did not necessarily expect that their individual friendships would suffer from lower quality, perhaps as result of the lack of group support for these relationships.

Participants included 118 early adolescents from 11 to 12 years of age completed a battery of questionnaires including well-known and validated measures of friendship quality, social and emotional loneliness, and interpersonal competence. They also completed an original 6-item questionnaire that tapped their experience and preference for friendships organized across multiple friendship groups. All assessments, including the newly created Social Butterfly self-report, were internally consistent and reliable.

Regression analyses indicated, as expected, that individuals who preferred and experienced friendship with individuals across many groups enjoyed lower levels of social
and emotional loneliness and possessed greater levels of some types of social skills, especially skills for initiating relationships and managing conflict. Girls, but not boys, with diffuse friendship involvement had more friends overall, but importantly, all relationships held after controlling for number of friends, indicating that it was the organization and not the extent of friendship involvement that mattered. Overall, results indicate the promise of incorporating the organization of friendships into models of adolescent friendship adjustment. Of special future interest, is how the position of the “social butterfly” in the network changes or stabilizes over time.
# TABLE OF CONTENTS

List of Tables ........................................................................................................... vii
List of Figures .......................................................................................................... viii
List of Measures ....................................................................................................... ix
Acknowledgements .................................................................................................. x

Chapter 1: Introduction ........................................................................................... 1

Friendships, Cliques, and Social Networks in Adolescence .............................. 3
"Structural Holes" ................................................................................................. 10
Developmental Literature ..................................................................................... 11
The Present Study .................................................................................................. 15

Interpersonal Competence ..................................................................................... 15
Friendship quantity and quality ............................................................................ 17
Jealousy .................................................................................................................. 20
Loneliness .............................................................................................................. 23

Summary ............................................................................................................... 24

Chapter 2: Method .................................................................................................. 27

Participants and Procedure ..................................................................................... 27

Measures ................................................................................................................ 28

Demographic Information ...................................................................................... 28
Friendship nominations ......................................................................................... 28
Social butterfly score ............................................................................................. 28

Interpersonal competence ...................................................................................... 29
Closeness and conflict in best friendship .............................................................. 30
Jealousy .................................................................................................................. 30

Loneliness .............................................................................................................. 31
LIST OF TABLES

Table 1 – Independent t-tests exploring sex differences for variables of interest…..60

Table 2 – Significant correlations of interest between social butterfly score and other variables…………………………………………………………………………61

Table 3 – Significant correlations between variables of interest…………………………..62

Table 4 – Summary of hierarchical regression analyses……………………………………..63
LIST OF FIGURES

Figure 1– Pictorial representation of a “structural hole”……………………………..64

Figure 2 – Near significant sex by social butterfly score interaction predicting the ability to assert oneself in relationships ………………………………………...65

Figure 3 – Significant sex by social butterfly score interaction predicting best friendship closeness ……………………………………………………………………….66
LIST OF MEASURES

Demographic information ................................................................. 67
Friendship nominations ................................................................. 68
Social Butterfly (SB) self-report ...................................................... 69
Revised Interpersonal Competence Questionnaire (ICQ-R) .................. 70
Friendship Quality Questionnaire (FQQ) .......................................... 72
Friendship Jealousy Questionnaire (FJQ) .......................................... 74
Peer Network and Dyadic Loneliness Scale (PNDLS) .......................... 76
ACKNOWLEDGEMENTS

I greatly appreciate the help and participation of the students, families, administrators, and staff of Milton Middle School in central Pennsylvania. I would like to also thank Dr. Jeffrey G. Parker for all his guidance throughout this project and my graduate training at The Pennsylvania State University. Lastly, I would like to thank my family and friends for all their support over the years and particularly throughout this project. This project would not have been possible without all of their help.
Chapter 1

INTRODUCTION

Individuals are motivated to form and maintain connections to fulfill their need to belong (Baumeister & Leary, 1995). Groups play an essential role in satisfying this need. For example, adolescents who are members in at least one peer group have been shown to have positive adjustment outcomes (Bagwell, Newcomb & Bukowski, 1998; Berndt, 1996; Clark & Ayers, 1988; Hartup, 1993; McGuire & Weisz, 1982). Specifically, individuals who are clique members are shown to have more positive peer relationships, decreased problem behaviors (Henrich, Kupermine, Sack, Blatt & Leadbeater, 2000), higher grade-point averages (GPA’s; Henrich et al., 2000; Ryan, 2001), increased school satisfaction (Ryan, 2001), and decreased loneliness (Rubenstein & Shaver, 1980, 1982). Conversely, individuals who do not have ties to any peer group show poor adjustment outcomes (Forsyth & Elliott, 1999; Nagle, Erdley, Newman, Mason & Carpenter, 2003). A lack of friends and difficulties in peer relationships are associated with increased loneliness (Forsyth & Elliott, 1999; Nagle et al., 2003), anti-social behavior, poor academic functioning, and other difficulties later in life (Parker & Asher, 1987; Parker, Rubin, Price & DeRosier, 1995).

A variety of different indices of friendship organization have been used to understand the effect of friendships and their organization on individuals. Most existing research examines the variability among individuals in relation to whether they are accepted or rejected by a focal group or their role in a group, such as being a central versus peripheral member (see Gifford-Smith & Brownell, 2003 for a review). Another approach is to specify how many groups or significant relationships individuals have, such as the number of varying
groups individuals belong to, how many friendships they have, or the size or organization of their primary friendship network (Cairns, Leung, Buchanan & Cairns, 1995; Kindermann, 1998; Shrum & Cheek, 1987). These indices foretell important outcomes about social success and adjustment. A common limitation in the literature is that conceptual or operational facts about groups are often ignored. Specifically, most groups are made up of recognizable subgroups that have some organization and relation to one another. For example, some groups are effectively subgroups of others. Likewise some discrete groups have partially overlapping members and are characterized by a good deal of cross group interaction and familiarity. However, others are almost entirely separate and function with little cross-group transmission of information or influence. Additionally, individual adolescents can have variable patterns of adjustment across different groups, and more importantly, the distribution of adjustment across these groups is itself likely to be significant. Thus, some individuals can be deeply integrated into one group but not others, and other individuals can be integrated into several groups at once.

The experience of participating in groups that are distinctive versus overlapping presumably is very different and may have different antecedents and consequences than the experience of participating in groups that have considerable redundancy in members or focus. Yet almost nothing is known of this at the moment. In this paper, I argue that the current literature fails to distinguish important variability among individuals in the organization of cliques with respect to each other, or the differences across adolescents as to how they distribute their friendships across different groups. In particular, I argue that the points of intersection between groups are important psychological and developmental niches that attract some individuals. In the extreme, some individuals participate in groups that,
apart from themselves, have no common members. These individuals, therefore, are the sole bridge for any important connection and contact between the various friendship circles that they participate in, and thus occupy an important structural position in the larger group collective. To occupy this position, these individuals, who I call social butterflies, must possess strong interpersonal skills. Further, the lack of overlap across their friendship circles means their friendship experiences are more compartmentalized compared to those of others, and that some dilution of the quality of their friendship experience occurs in the aggregate. Likewise, because they are less likely to be mutual friends with one another, the friends of social butterflies are more prone to question the social butterflies’ commitment, and therefore be more prone to friendship jealousy. On the other hand, because the friendship circles of social butterflies are more functionally autonomous, they may have redundant social support systems that insulate them more than others from the vagaries of inclusion and exclusion in specific groups, and therefore, enjoy better protection from some forms of loneliness.

The present study was designed to assess variability in the extent to which individuals occupy a social butterfly-type organization to their friendship participation and examine its interpersonal and intrapersonal correlates. Before reviewing the specifics of this particular study, the current literature on friendships, cliques, and social networks in adolescence, “structural holes” as identified by Industrial-Organizational psychologists, and the existing developmental literature on “liaisons” is reviewed. The remainder of the paper will then focus on the present study and the various variables of interest.

Friendships, Cliques and Social Networks in Adolescence

Peers serve different functions over the course of development (Parker & Gottman, 1989). In early childhood, peers are mainly playmates, individuals with whom time is spent.
As children begin to mature and more time is spent with peers, as opposed to parents, reciprocated friendships begin to form. Friendships are characterized, not only by investments of time, but also by mutual trust and assistance. Children are now turning to their friends more for social-emotional support and begin to rely on their friends to be there when they need them. By adolescence, friendships with specific peers are based on a history of interactions, and have a basis of expectation for future interactions. Although the focus is on behavior when understanding friendships, unlike mere social exchanges between two individuals, friendships also encompass affective and cognitive components. Specifically, close friendships are characterized as involving companionship, intimacy, and closeness.

Dyadic relationships, or friendships, have received much attention in peer relations research over the years. Friendship stability, selectivity, interactional style, similarity between friends, gender differences in friendships, and outcomes associated with positive friendships, amongst other things, have been explored. For example, Bowker (2004) conducted a study of friendship on adolescents in grade 7 and found that half of the reciprocated best friendships remained stable across the school year. In a similar study, Bowker (2000) explored the association between friendship stability and other friendship and coping variables of interest. She found that friendship stability was associated with higher levels of self-disclosure, greater use of problem-focused coping and less reliance on more passive, avoidant coping strategies (Bowker, 2000). Epstein (1989) argues that the most salient guideline for adolescents choosing friends is whether the potential friend had social traits that are congruent with the teen’s own identity. This is important because as adolescents form new friendships, ties among those with shared activities are strengthened, while bonds with other individuals diminish. Thus, new friends are likely to have a large
effect on a teen by anchoring preexisting similarities or changing the adolescent’s discrepant behavior (Epstein, 1989). Research on friendship outcomes has found that successful friendships function as key sources of social support to adolescents, contribute to the growth of social perspective taking skills, and help them develop poise and prosocial skills important for later relationships. Friendships and other positive peer experiences also contribute in significant ways to children's self-understanding and cognitive skills and achievements (Newcomb & Bagwell, 1996; Parker et al., 1995). Conversely, a lack of friends and difficulties in peer relationships are associated with loneliness, anti-social behavior, poor academic functioning and other difficulties later in life (Parker et al., 1995; Parker & Asher, 1987).

Gender differences exist in how friends interact with one another (Buhrmester, 1990). Girls appear more interpersonally competent than boys and have friendships that are characterized by higher levels of intimacy with an emphasis on closeness with their friends (Berndt, 1982; Buhrmester & Furman, 1987; Clark & Ayers, 1993; Foot & Chapman, 1977; Furman & Buhrmester, 1985, 1992). Researchers have defined emotional closeness as having qualities in a friendship such as caring for a friend, saying nice things about each other, enjoy being with a friend, being available to talk to when needed, along with other aspects (Shulman, Laursen, Kalman & Zarpovsky, 1997). From middle childhood through adulthood, girls and women show more responsive and supportive behavior, more self-disclosure, and fewer disagreements in observed interactions with their friends than do boys and men (Dolgin & Kim, 1994; Leaper, 1998; Leaper, Carson, Baker, Holliday & Myers, 1995; Phillipsen, 1999). Girls show intimacy in their friendships by having conversations about themselves or less personal topics. If girls reported having a very close friend, their
conversations consisted of feelings and emotions. When speaking to each other, girls are more likely to soften directives or suggest their ideas or opinions (Phillipsen, 1999). In adolescence, girls are searching for their own identity at the same time they are seeking acceptance within their peer groups. This can be a confusing transition, but because of intimacy within their relationships, girls are likely to pursue social connectedness and are more inclined to give up their individuality (Shulman et al., 1997). Shulman and colleagues (1997) suggest that the intensive experience of intimate relationships among girls leads them to resolve differences between individual needs with a greater capacity of knowledge.

Boys may show intimacy in their friendships differently than girls. Boys display less supportive and more aggressive, confrontational behavior in their social interactions with friends and with non-friends than do girls (Denton & Zarbatany, 1996; Maccoby & Jacklin, 1980; Phillipsen, 1999). Specifically, they are more assertive in their communications (Phillipsen, 1999). Their means of communication within their friendships involve direct demands or orders, and are more likely to interrupt, threaten, heckle and name-call towards same-sex friends (Phillipsen, 1999). Rather than sitting down and sharing intimate conversations, boys express themselves intimately through shared activities, such as playing basketball or football. McNelles and Connolly (1999) suggest that boys occasionally discuss topics such as their feelings and self-disclosure, but this occurs more when participating in an activity rather than just talking. Boys are more likely to tease or joke with friends about personal matters. Boys concentrate on establishing their individuality. It is more important to boys than girls to be themselves rather than to fit into a social crowd. Boys tend to “play” and talk to one another when in large groups or crowds. Because they are less intimate, it is not as important to boys as it is to girls to have a best friend or a small group of close friends.
Within the group, boys can obtain status from peers and how boys gain intimacy within their friendships (Phillipsen, 1999).

However, focusing on friendships, alone ignores the fact that these interactions occur within a larger social network comprised of cliques. Cliques are voluntary, closely-knit groups of about 5-7 people who are characterized by high levels of closeness, intimacy, and self-disclosure, have embedded in them particular strengths and subcultures differentiating one clique from another (Brown, 1990). Cliques in adolescence tend to have clear members and boundaries between them. Cliques afford members the resources and social-emotional support needed to facilitate positive adjustment outcomes. Children tend to turn to their clique when faced with problems at school or at home. They also tend to rely on their cliques for social activities and sources of intimacy and support. The current literature has shown that individuals in cliques have generally beneficial adjustment outcomes (Bagwell, Newcomb & Bukowski, 1998; Berndt, 1996; Clark & Ayers, 1988; Hartup, 1993; McGuire & Weisz, 1982), including decreased loneliness (Rubenstein & Shaver, 1980, 1982), increased school satisfaction (Ryan, 2001), and increased grade-point averages (Ryan, 2000).

The structure and nature of cliques differ in form and function between males and females (e.g., Eder, 1985; Fine, 1991). Girls’ networks tend to be more closely linked and denser in its connections within groups (Henrich et al., 2000). As with friendships, cliques also provide females with intimacy and sources of emotional support, whereas in boys’ peer social networks, the groups tend to be more diffuse (Henrich et al., 2000). The varying group patterns and dynamics of males and females lead to varying positive outcomes between the sexes. For girls, being a clique member is associated with more positive peer relationships, decreased problem behaviors, and higher grade-point averages (Henrich et al., 2000). For
boys, on the other hand, being a clique member is associated with greater friendship
closeness that for isolates, decreased internalizing problems, and higher scholastic
competence (Henrich et al., 2000).

Two common approaches are used to identify cliques, including interviewing students
about the social groups that they perceive in their school, and asking students to make
friendship nominations. Moreno (1934) is credited as the first researcher to use sociometric
assessments to determine groups of children and adolescents. Since Moreno’s work, other
researchers have used different assessment techniques to identify clique structures within the
peer social network. In brief, the social cognitive mapping approach (Cairns & Cairns, 1994;
Cairns, Xie & Leung, 1998; Gest, Farmer, Cairns & Xie, 2003; Kindermann, 1998) is based
on the assumption that students themselves have accurate cognitive “maps” of the social
groups around them. Children are asked to identify as many groups in their school as
possible. Others have used sociometric questionnaires (Moody, 2001) asking children to
nominate their friends. Moody uses this information to create a pictorial representation of the
connections between individuals. The denser and more tightly linked, or interconnected,
particular sets of individuals are, the more likely they are an identifiable group.

In these methods, the experimenters are assessing the existing social network and
determining a particular child’s position in that network. To achieve this goal, experimenters
choose methodologies that are consistent with their conceptual views of friendship. They
both assume that individuals that like each other and that choose to spend time with one
another are friends. With this assumption in common they differ on their assumptions of who
can best report this information. Cairns et al. (1998) and Kindermann (1998) argue that by
asking children who their own friends are, there is bias in reporting, such that children feel
compelled to list a certain number of people regardless of whether or not they are actually friends. Similarly, they may think they have a few close friendships, but when their friends are asked it is not reciprocated. So, Cairns et al. (1998) and Kindermann (1998) posit that peers are the best observers of friendship based on their observations of repeated interaction, and can accurately list who is friends with whom. This key difference in rationale, self-report versus peer-report, changes how the analyses are done and the interpretations of the findings.

Advanced statistical and methodological strategies have facilitated the exploration friendships, cliques, and social networks, finding the benefits and uncovering the detriments associated with failed friendships and network affiliations. To further advance the field, a focus on particular positions in the network is necessary. Different roles (i.e., with friends who are friends with each other, and those with non-redundant friendships) in the network require different skill sets for forming and maintaining the types of connections characteristic of that particular position. Although the literature has explored the benefits and skills necessary to be embedded in cliques, it has ignored individuals that are able to maintain friendships that span across friendship groups. A more specific and detailed exploration of these different roles, particularly the role of the social butterfly, may reveal social skills, friendship qualities, and adjustment outcomes that may help further the understanding of adolescent friendships in the social network in which they are embedded. Social butterflies, those with friendships across different groups, are hypothesized to have characteristic social skills that allow them to form and maintain relationships across groups. Presumably this phenomenon exists in the peer network of adolescents, however, little work has been done to date to explore characteristics and outcomes for this group of adolescents. Researchers working within an Industrial/Organizational psychology framework, however, have studied a
similar phenomenon that exists within the organizational context: individuals who fill “structural holes” in an organizations’ network.

“Structural Holes”

Other literatures, such as those in Industrial/Organizational psychology, have explored the nature of individuals who fill the gaps between different groups of people, or “structural holes”, in the network (Burt, 1992). Burt (1992) defines “structural holes” as “the separation between non-redundant contacts.” Specifically, non-redundant contacts are individuals who do not themselves have connections linking them to one another (see Figure 1). In other words, without the person filling the “structural hole”, the individuals in the network would not be connected in any way. Burt shows that persons active in building relations between dissimilar people gain many valuable resources; for example, they receive early promotion in organizations because they have access to information about more rewarding opportunities (Burt, 2000). As such, structural holes are “entrepreneurial opportunities for information access, timing, referrals, and control” (Burt, 1992). This position in the social network provides an opportunity for social capital to which other positions in the network may not have access (Burt, 1992).

Burt, Jannotta, and Mahoney (1998) have also explored how the personality characteristics of individuals that fill “structural holes” in a network differ from individuals not involved in linking groups. They found that individuals embedded in single groups emphasized conformity and obedience, and thrived on the social support of others, “living in a world created by others” (Burt et al., 1998). Whereas, people in structural holes are independent people concerned with the accuracy of their information on colleagues, and are experienced with resistance. These individuals enjoy convincing others, are in search of
authority, and thrive on advocacy and change; they are the “authors of their own world” (Burt et al., 1998).

The “structural hole” phenomenon may not be limited to social networks within an organizational structure. A parallel may exist with adolescent peer social networks. During adolescence, the division of individuals into cliques provides the opportunity for gaps between groups to emerge. Applying the findings of structural holes to adolescent peer social networks, adolescents that successfully form and maintain friendships across cliques, called social butterflies for the purposes of this paper, may have access to different resources provided by these separate cliques. In order to successfully establish and maintain this position in the peer social network, social butterflies may not only have the personal characteristics that facilitate maintaining this position, but they also have access to resources in the network that can allow for positive adjustment outcomes (e.g., decreased loneliness). By having connections to individuals that are not themselves linked, social butterflies potentially have access to groups with diverse strengths and weaknesses and can capitalize on this diversity to maximize their social capital.

Developmental Literature

Although a clear conceptual parallel exists between the study of “structural holes” in organizations and those who fill the gaps between friendship cliques in the adolescent peer social network, the current methodology used in studying cliques and clique membership has ignored adolescents’ experiences of being a social butterfly. As noted, the literature typically focuses on those individuals who are central to one group or those that have no group memberships (Henrich et al., 2000; Kindermann, 1993; Liu & Chen, 2003; Ryan, 2001; Urberg, Degirmencioglu, Tolson & Halliday-Scher, 1995). Researchers faced with
individuals with affiliations across the network typically classify these individuals as members of the group to which they exhibit the strongest membership and ignore their peripheral memberships. In a few instances, researchers have recognized individuals who are “liaisons” (i.e., someone with only peripheral memberships to multiple groups) but excluded them from analyses (Liu & Chen, 2003; Ryan, 2001). These methods of dealing with affiliations across group boundaries ignore the potential advantages and characteristics this group of adolescents may have that allow them to successfully maintain this position in the network (e.g., greater interpersonal competence).

Nonetheless, some authors have discussed the importance of taking this group of adolescents into consideration (Ryan, 2000, 2001). For example, in reviewing the literature on adolescent motivation, engagement, and achievement in school, Ryan (2000) argued that attention to individuals with friends in different groups could be interesting and helpful because these individuals may serve as a potential moderator of the socialization of adolescents’ motivation, engagement, and achievement in school. She argues that characteristics of individuals occupying this position in the peer social network may be congruous or incongruous with those embedded in groups concerning adolescent motivation, engagement, and achievement. She speculates that if congruous the peer groups may differ in regards to motivation, engagement, and achievement, and thus, the possibility of additional questions may arise: “How do adolescents negotiate among multiple groups? How do adolescents resolve incompatible characteristics of multiple groups? What determines which groups have more influence in these individuals’ lives?”

To date, Ryan’s (2000) challenge has gone almost entirely unanswered. An exception appears to be early work on role of liaisons in the adolescent peer social network done by
Damico (1975, 1976). Damico identified two types of liaisons. The first type were individuals who were able to negotiate relationships between individuals in multiple groups, as opposed to being exclusively involved in a single clique. This group of liaisons appeared more socially competent and better able to adapt to a changing environment than clique members. The second type included individuals characterized as those trying unsuccessfully to gain clique membership. These individuals appeared less socially competent and less able to adapt to a changing environment than clique members.

In addition, some researchers have included liaisons as a comparison group for clique members and isolates, as opposed to solely focusing on liaisons (e.g., Henrich et al., 2000; Ennett & Bauman, 1993). In exploring peer relations and school adjustment, Henrich et al. (2000) found that clique members and liaisons both had positive peer relations and high levels of behavioral adjustment. However, in the school adjustment domain this effect differed by sex. For girls, clique members had higher GPA’s than liaisons, whereas for boys, liaisons had higher scholastic competence than clique members. Henrich et al. (2000) postulate that girls’ feelings of competence, relatedness with peers, and behavioral and academic adjustment may be bolstered by belonging to a close-knit social group. Conversely, having fewer friends or not being embedded in a single clique may undermine feelings of competence, relatedness, and behavioral and academic adjustment in girls. Conversely, boys in the liaison role, as opposed to those embedded in cliques, were found to have higher scholastic competence. Henrich et al. (2000) suggest that boys may be socialized toward activity and autonomy orientation in their friendships (Eder, 1985; Fine, 1991). It is possible that rather than seeking emotional support from their friendships at school, boys look to
friends for affirmation of their personal competence. Therefore, friendship closeness would not predict academic competence.

Finally, Ennett and Bauman (1993) reported that isolates had higher rates of cigarette smoking than did clique members and liaisons. Ennett and Bauman (1993) speculate that because they found the less than 25% of adolescents in their sample were smokers, coupled with the tendency for friendship selection to be based on smoking behavior (Fisher & Bauman, 1998), it is not surprising that most of the clique are comprised almost entirely of nonsmokers (Ennett, 1991). Accordingly, Ennett and Bauman (1993) suggest that within and across cliques, cliques may contribute more toward facilitating the maintenance of nonsmoking behavior rather than promoting the onset and maintenance of smoking. Thus clique members and liaisons may be buffered from the peer pressures of smoking.

The aforementioned studies are a good start in understanding how cliques and non-clique members compare to liaisons. However, more detailed, comprehensive studies of social butterflies, a group including liaisons and others that connect otherwise unconnected people, are needed to understand what mechanisms are at work and how these lead to differences between individuals occupying different positions in the larger social network. The initial differences shown between liaisons and clique/non-clique members makes for a compelling reason to further explore characteristics and outcomes associated with this unique position in the network: social butterflies. Conceptually, individuals that can form friendships with people in different cliques may have skills that aid in forming and maintaining these relationships. However, the friends of social butterflies may force them to sacrifice some dimensions of their relationships, mainly intimacy and closeness, in order to maintain their friendships across cliques.
The Present Study

In the present study, I explore the personal characteristics, friendship qualities, and adjustment outcomes for social butterflies in the peer social network. Social butterflies are defined as those individuals who have friendships across groups. Those with a greater propensity towards being a social butterfly may have varying personal characteristics, friendship qualities, and adjustment outcomes than those who have less of an inclination of being a social butterfly. This study may reveal the social skills necessary to maximize involvement and subsequent adjustment outcomes in the peer social network. In particular, I hypothesize that those with greater social butterfly-type friendships will differ in terms of interpersonal competence, friendship quantity and quality, jealousy, and loneliness. The bases for these expectations are reviewed below.

Interpersonal competence

Making and keeping friends requires good social skills. Forming and maintaining friendships may allow individuals the opportunity to practice these skills and “fine-tune” them to fit a variety of situations. Thus, having friends increases one’s social skills and subsequently increases the likelihood of making and keeping friends (Hartup & Stevens, 1997). Social butterflies may be unique not only because of the position they hold in the peer social network, but also because of the personal attributes that allow them to form and maintain friendships across a variety of different groups in the network. Of particular interest to this study is the construct of interpersonal competence as represented by skills for forming and managing close relationships (Buhrmester, 1990). This personal characteristic may differentiate those with a tendency toward being a social butterfly from those with less of a propensity. In exploring the interpersonal competence of social butterflies, we may be better
able to determine the nature of positive peer relationships and the interpersonal skills necessary to form and maintain friendships in multiple social clusters.

According to Buhrmester (1990), with the changing of adolescent friendships from playgroup activities in childhood to more friendship-based relationships in adolescence, particular social skills become more salient. Adolescents must now be capable of initiating conversations and relationships outside the context of the classroom. They should also be skilled in providing emotional support for their friends and knowing the appropriate level of self-disclosure in their friendships (Youniss & Smollar, 1985). Additionally, interpersonally competent adolescents are able to express their opinions and dissatisfaction in the relationship honestly with each other, and are able to manage conflicts that may arise in their friendships (Bigelow & LaGaipa, 1980; Shantz, 1987). According to this reasoning, adolescents that are interpersonally competent should have more positive outcomes than those that are less socially competent. Argyle (1981), for example, has shown that people who have failed to acquire some aspects of everyday social skills, either through exposure to unskilled models or through a lack of experience and practice, tend to be socially isolated or rejected, in turn leading to anxiety and depression.

Because of their position in the social network and ability to maintain this position, social butterflies have more opportunities to interact with a variety of people and must be able to achieve their goals while maintaining positive relationships. Through their exposure to a variety of experiences with different people in different groups, social butterflies have the opportunity to practice and acquire social skills necessary to function in multiple groups. Additionally, multiple non-overlapping affiliations provide individuals with exposure to different reactions from peers in different situations, which can mold their social skills. For
example, different groups may have different behaviors they deem appropriate in attaining attention or acceptance within a given group. Through reinforcement and modeling, different groups can provide social butterflies with an extensive repertoire of behaviors that can be used in the appropriate contexts. Therefore, social butterflies are expected to be more interpersonally competent than those with less social non-overlapping affiliations in the social network.

In summary, one goal of this study is to focus on the interpersonal competencies of social butterflies, particularly their ability to initiate relationships, assert themselves in their relationships, and resolve conflicts that may arise in their friendships. It is hypothesized that social butterflies will have high interpersonal competence, as well as additional opportunities to fine-tune these skills, due to the nature of their position in the social network; having to form and maintain many friends in a variety of groups.

*Friendship Quantity and Quality*

Over the life course, time spent with friends is greatest during adolescence, with adolescents spending approximately 27% of their time awake with their friends (Larson & Bradney, 1988). Understanding this important element in adolescents’ lives, therefore, is of great importance. To best understand the nature of individuals’ friendships, it is important to measure both friendship quantity and friendship quality. Much of the current literature has focused on the existence of friendships and the nature of these relationships in the peer network. Specifically, the literature has tended to focus on individuals with friends and comparing them with those without friends. Those with friends tend to have decreased loneliness, higher social competence, and higher academic achievement (Parker et al., 1995; Parker & Asher, 1987). However, these results are difficult to interpret because having
friends is usually confounded with having good friends. Those embedded in groups tend to have more friends and higher friendship quality within each relationship because they have the time and resources to spend cultivating more intimate and close friendships. Focusing on other positions in the social network, as opposed to mainly those that are embedded in groups, may be a way in which we can untangle the effects of having friends and having high quality friendships.

Social butterflies, by definition, have friends in across different cliques. These non-overlapping affiliations afford them access to different cliques of individuals and the potential to be included in different group activities. Additionally, a larger social network affords a child more opportunities for friendship formation. However, because social butterflies by definition have friends in distinct groups that have little meaningful contact with each other, too much time spent with one group or another may jeopardize their other friendships. Therefore, it is expected that social butterflies will have difficulty cultivating high quality friendships across all their friendships because they have less time to invest in any one friendship. This is not to say that they will not have high quality friendships at all. Social butterflies may have one or two high quality friendships where they can find social-emotional support, intimacy, and closeness. But instead, it is expected that after considering the number of friends and the quality of each friendship, on average across all friendships individuals with a greater propensity toward being a social butterfly will have lower average friendship quality. Those with redundant connections are expected to have more than one friendship and the time to invest within that particular group to cultivate high quality friendships with those group members. In summary, it is expected that social butterflies will
also have slightly higher friendship quantity but lower friendship quality across their friends than those embedded in a single group.

Sex differences have also been reported in the literature regarding friendship quality, but not quantity. Friendship networks of boys and girls tend to vary in their structure such that girls tend to have denser, more defined friendship clusters, whereas males tend to have more loosely defined boundaries between cliques (Cohen, 1977). No gender differences, however, have been found for the quantity of friendships boys and girls may have (Nagle et al., 2003). However, the quality of these friendships tends to vary as a function of sex. Girls are consistently found to have more intimacy in their friendships than boys (Berndt, 1982; Buhrmester & Furman, 1987). The same sex differences are expected for social butterflies in this study, such that girls who are social butterflies are expected to have higher quality friendships than boys who occupy the same position in the social network.

To reiterate, the current literature has typically confounded friendship quantity and quality because of the nature of the individuals of interest: single-group members versus those who do not have clique membership. By exploring social butterflies the effects of the two may be better untangled because, by definition, social butterflies are expected to have more friends than those with more overlap in their friendships. Because of the time constraints to fully cultivate all friendships, social butterflies are hypothesized to have lower quality, on average, than those with a lower tendency toward being a social butterfly. Additionally, consistent with the literature on friendship quality, females are expected to have higher friendship quality than males.
Jealousy

Because dyadic friendships are normally embedded in the larger web of other relationships, friendships may experience tensions when members find themselves caught between divided loyalties and competing obligations to other friends. Specifically, individuals in friendships who perceive their partner’s outside relationships as threatening the quality or continuity of their own friendship can feel neglected, angry, and jealous. Jealousy is an aversive emotional reaction to a friend’s involvement with another peer and is experienced when someone perceives a threat to a valued relationship (Low & Parker, 1999; Parker, Low & Wargo, 1999). Jealous individuals may interpret their friends’ involvement with other peers as an end to their own relationships with their close friends or may be distressed by the prospect of having to share their valued friends with others. Therefore, jealousy necessarily involves a relationship triangle that begins with a close friendship between two people (Parker et al., 1999). Specifically, a triangle is formed when a third person could potentially change the already established friendship dyad by his or her involvement with one of the original friendship members. If the other member of the friendship dyad feels that the involvement of this third party is a threat to the friendship, and is upset at this, that person is said to be jealous. Emotionally, the upset that individuals experience when they perceive a threat to a valued relationship is generally a blend of negative emotions, including fear, anger, sadness, and insecurity (Guerrero & Anderson, 1998; Parrott, 1991; Tangney & Salovey, 1999).

Situations that could provoke jealousy are likely to occur regularly in young people’s friendships due to friends’ frequent interactions with other peers. However, if the original dyadic relationship is not one of high quality, intimacy, and closeness, interactions with other
individuals outside the dyad may not be viewed as particularly threatening because the existing friendship is not one of great social-emotional importance. The “left out” individual may instead rely on other friends, ones with higher friendship quality, for social-emotional support. Therefore, it is expected that feelings of jealousy will arise when a high quality friendship, one seen as high in importance and has been cultivated, is being threatened. Because single-group members are thought to have higher friendship quality, they are more likely to experience jealousy when their friend chooses to interact with another individual. Because they have invested time and energy in cultivating high quality friendships, they have more to lose in their relationships, and will be more jealous. Social butterflies, on the other hand, are expected to have a lower average friendship quality amongst their friends, and are, thus, less invested in any one friend. Therefore, they are less likely to get jealous when faced with an interloper’s interaction with their friend. Social butterflies have an additional advantage such that if their friend from a particular group has made plans that do not include them, they have the resources to instead turn to another friend or group for social-emotional support. Thus, these individuals will again be less jealous because they have the resources to turn to different friends with which they can spend their time.

In addition to peer network position differences between individuals on their jealousy scores, sex differences are also expected. Parker and his colleagues have found that girls tend to be more vulnerable to friendship jealousy than are boys during adolescence (Parker & Gamm, 2003; Parker & Ramich, under review; Roth & Parker, 2001). They speculate that girls, having characteristically higher quality friendships, are more invested in their friendships and will be more threatened by the presence of an interloper than males. The same finding is expected when exploring the nature of social butterflies’ friendships. Females
who are social butterflies are expected to be more vulnerable to jealousy than males who are social butterflies, although both are expected to be less jealous than their single-group member counterparts.

Being a social butterfly may buffer a child from friendship jealousy, but may have adverse effects on their friends’ jealousy scores. Having a friend that has friends that are unshared may provide additional opportunities for jealousy to arise. Individuals who are friends with social butterflies may become increasing jealous when the social butterfly chooses to interact and spend time with a different friend. For example, if a social butterfly spends time with one friend (person A), another friend (person B) may feel that his/her friendship with the social butterfly is threatened. Because they are not also connected with person A, the friends of a social butterfly are more likely to be left out of the activity. Because social butterflies have many friendship connections between otherwise unconnected people, the frequency of this type of situation occurring for those who are friends with social butterflies is increased. It is expected that although social butterflies themselves are buffered from feelings of jealousy, their friends are likely to be perceived by peers as being more jealous than those who do not have friendships with social butterflies.

In summary, it is hypothesized that social butterflies have lower friendship quality and may be less invested in any one friend, and thus may be less likely to get jealous when faced with the introduction of an interloper, especially if they are male. Females are expected to be more vulnerable to jealousy, although being a social butterfly may slightly buffer their vulnerability. Although social butterflies may be buffered from jealousy, their friends, potentially being faced with more opportunity for jealousy-provoking events to occur, are
hypothesized to be more jealous than those who do not have friendships with social butterflies.

Loneliness

Social butterflies have associations with groups and are expected to have positive adjustment outcomes. Of particular interest to this study is their level and type of loneliness. The literature on adolescent loneliness has typically considered loneliness as a broad construct that includes both the social and emotional domains of loneliness. Hoza, Bukowski, and Beery (2000), however, have proposed exploring social and emotional loneliness separately using their Peer Network and Dyadic Loneliness Scale. Social loneliness, also known as peer network loneliness, is conceptualized as the absence of social relationships or from feeling that you are not a part of the group. In contrast, emotional loneliness, also known as dyadic loneliness, encompasses the lack of close, intimate attachments to another person. For most studies, this distinction is unimportant because the researchers are interested in comparing adolescents embedded in groups with those with no group memberships. Individuals who are not members of groups would be expected to be low on both kinds of loneliness dimensions. However, when considering the position of the social butterfly it becomes necessary to distinguish between social and emotional loneliness. By virtue of having friendships with multiple people in different groups, social butterflies are expected to be low on social loneliness. However, because these individuals’ emotional investments are “spread thin” across the peer social network, dividing their time across a variety of groups, they may lack the friendship quality in any one friendship dyad necessary to fulfill their emotional needs, and will thus have moderate to high scores on emotional loneliness.
In summary, this study will focus on the adjustment outcomes of emotional and social loneliness. It is expected that social butterflies will have low social loneliness and moderate to high emotional loneliness due to the nature of their position in the social network; having many non-redundant friendship connection without the intimacy and emotional support across friendships.

**Summary**

In the present study, I explored the personal characteristics, friendship qualities, and adjustment outcomes of social butterflies in their adolescent peer social network. In middle school, clique boundaries become more salient and divisions between cliques are more distinct. The structure of middle school, changing of classes and the merging of elementary schools, allows for adolescents to be more selective of their friends, and thus they tend to spend more time with similar individuals. During middle school, other variables of interest to this study (e.g., jealousy and peer social network structure) also become important as self-selected groups begin to emerge during this time period. Another variable of interest, friendship jealousy, for example, is found to be heightened during the middle school years. The heightened salience of the variables of interest and the distinctiveness of social butterflies in middle school were the reasons for choosing middle school participants for this study.

To successfully maintain friendships across individuals who are not friends with each other, social butterflies must be able to adjust their behaviors appropriately to different situations while maintaining positive relationships. Additionally, individuals with more clique memberships and affiliations are expected to have at their disposal social and academic support resources that allow for more positive adjustment outcomes. Thus,
compared with those with fewer affiliations across cliques, social butterflies are hypothesized to have increased interpersonal competence and decreased social loneliness, above and beyond just having more friends. Because their friendships are not localized to one group and their friends are not necessarily friends with one another, social butterflies are hypothesized to have decreased friendship quality across their friends, decreased friendship jealousy, and increased emotional loneliness, even after controlling for the number of friends they have.

Additionally, friends of social butterflies are hypothesized to be more jealous than those without connections with social butterflies. Finally, the main and moderating effects of gender will be examined. Past research provides mixed results concerning the effect of gender, if any, on interpersonal competence, social competence, social loneliness, and emotional loneliness. Because no clear pattern exists in the literature, no hypotheses are offered for this study. Instead, these analyses were exploratory. For the variables of friendship quantity, friendship quality, and jealousy gender effects were expected such that no gender difference exists between males and females on friendship quantity. However, females are expected to have higher friendship quality and experience more jealousy than males.

In addition to exploring the characteristics and outcomes of social butterflies, the relationships between the variables of interest were also explored. The current literature has already uncovered the nature of some of the relationships, but others still remain unexplored. This study will service to replicate existing findings and explore new relationships. Interpersonal competence is expected to buffer an individual’s vulnerability to jealousy by affording them alternative ways of thinking about and reacting to the situation, and thus be negatively correlated. Friendship quantity is expected to be negatively correlated with social
loneliness. By definition, social loneliness refers to the absence of social relationships or loneliness from feeling that you are not a part of the group. Having fewer friends is expected to relate to increased social loneliness. Whereas, having decreased friendship quality is expected to be related to increased emotional loneliness, the lack of close, intimate attachments to another person. Friendship quality is also expected to be related to jealousy, such that those with higher average friendship quality will be more likely to be jealous when faced with the presence of an interloper, because they have more to lose in terms of their relationship. Additionally, as stated above, sex differences are predicted for both friendship quality and jealousy, such that girls are more likely to be higher on both as compared to boys.
Chapter 2

METHOD

Participants

A total of 118 early adolescents from grades 6 and 7 (64% from the 6\textsuperscript{th} grade) and ranging in age from 11 to 12 years participated in the study (approximately 30% consent rate). The sample included 39% male and mostly Caucasian (89% of sample) participants recruited from a middle school in central Pennsylvania. The school population consisted of 41% that were eligible for free or reduced lunch, with an increasing non-English speaking population. Statistics from the 2000 census indicated the median income of the town as $36,062, with 16.5% over the age of 65 years and 28.6% of adults in the borough 25 years or older holding less than a high school diploma.

Procedure

One week prior to data collection, parent consent forms were distributed in classrooms to approximately 400 families of potential participants in the sixth and seventh grades detailing the study and soliciting parental consent. Research staff visited classrooms to describe the study to the students. A total of 118 sixth and seventh graders (30% consent rate) consented to participate in the study. Counterbalanced survey packets were distributed to each participating student, and the students were given specific instructions for each questionnaire. Packets were then collected and students were given token gifts in appreciation of their participation.
Measures

Demographic information – Participants were asked to provide their name, sex, age, grade, and race. Identification numbers were assigned to each student after data collection.

Friendship nominations – Participants were asked to list the names (first and last) of their friends and then indicate how close they felt to that particular friend on a 7-point Likert scale (1 = “Not at all close”, 7 = “Very close”). Based on these nominations and ratings, friendship quantity and average closeness across friendships were determined. Friendship quantity was determined by counting the number of friends nominated. Average closeness was calculated by averaging the closeness ratings of each friend nominated. Sociometric social butterfly score was also to be determined by the friendship nominations. The friendship networks for each individual and the connections between their friends were to be measured, and the number of non-overlapping units calculated, such that the higher the number of non-overlapping friendship units, the greater the individual’s social butterfly score. Due to a low participation rate (approximately 30%) sociometric social butterfly score could not be reliably determined by mapping out participants’ friendship networks. Instead, social butterfly score was determined solely through the newly developed and sufficiently reliable self-report measure.

Social Butterfly score – The Social Butterfly (SB) self-report measures the degree of a participant’s friendships across the network. Participants were asked to indicate on a 5-point Likert scale how true the statements were for them (1 = “Not at all true”, 5 = “Really true”). Six items were used to measure an individual’s social butterfly score (“Most of my friends are not friends with each other”, “I fit in well with different groups of students”, “I have separate groups of friends I can hang-out with”, “I feel like I’m a part of various
groups”, “I am accepted by more than one group at school”, “Most of my friends don’t hang-out with each other”). The internal consistency reliability for this measure was alpha = .84.

The summation of scores across the 6 items created a single social butterfly score, with potential scores ranging from 6 (low social butterfly score) to 30 (high social butterfly score).

Interpersonal competence – A shortened version (24-items) of the Revised Adolescent Interpersonal Competence Questionnaire (ICQ-R, Buhrmester, 1990) was used. Three subscales of the original five subscales of competence in close relationships with peers were included: 1) management of conflicts (8-items; e.g., “How good are you at resolving disagreements in ways that make things better instead of worse?”, “How good are you at dealing with disagreements in ways that make both people happy in the long run?”), 2) management of assertiveness (8-items; e.g., “How good are you at getting people to go along with what you want?”, “How good are you at sticking up for yourself?”), and 3) management of initiation of friendships (8-items; e.g., “How good are you at asking someone new to do things together, like go to a ball game or a movie?”, “How good are you at going out of your way to start up new relationships?”). Responses were recorded on a 5-point Likert scale (1 = “Poor at this”, 5 = “Extremely good at this”) indicating the level of competence and comfort that the adolescent would have in handling each type of situation. Internal consistency reliabilities for each subscale of this measure were at adequate levels (management of conflicts, alpha = .83, management of assertiveness, alpha = .85, and management of initiation of friendships, alpha = .84). Although the correlations between the subscales ranged from .42-.66, because the full interpersonal competence scale was not used, scores for each subscale were aggregated to form a single score for each subscale, rather than an a total interpersonal competence score.
Closeness and conflict in best friendship – A shortened version (17-items) of the Friendship Quality Questionnaire (FQQ; Parker & Asher, 1993) was used. The items ask students to indicate how true a particular quality is of their relationship with a specific friend (e.g., “Jamie and I loan each other things all the time”). Two subscales of friendship quality included: 1) conflict (3-items; e.g., “We get mad at each other”, “We argue”), 2) closeness (14-items; e.g., “When one of us is mad about something that happened to us, we can talk to each other about it”, “We ask each other for help and advice when we have trouble figuring out something”). Children are asked to rate each item on a 5-point Likert scale (1 = “Not at all true”, 5 = “Really true”). Internal consistency reliabilities for each subscale of this measure were at adequate levels (conflict, alpha = .87, and closeness, alpha = .90).

Jealousy – Participants’ general disposition to friendship jealousy was assessed using a shortened version of the Friendship Jealousy Questionnaire developed by Parker, Low & Wargo (1999). This questionnaire measured participants’ jealousy in friendships by having them rate how jealous they would become in ten hypothetical situations. Examples of these situations are “You call your best friend several times to see if she wants to go see a new movie, but when you finally get through, she says that another girl that you both know already asked her to go see it and she agreed”, “You find out that your best friend got into a big fight with her parents, and she called another girl that you both know for advice and did not talk to you”, and “Your best friend joins a team or club without you, and she starts spending a lot of time with another girl that you both know who is also on that team or club.” Responses were recorded on a 5-point scale (1 = “Not at all jealous”, 5 = “Very jealous”). Internal consistency reliability for this measure was alpha = .93. Scores across the 10 items were then aggregated to create a single friendship jealousy score. The low participation rate
hindered the calculation of the target’s friends’ jealousy scores. Thus, this hypothesis could not be reliably tested.

*Loneliness* – The Peer Network and Dyadic Loneliness Scale (PNDLS; Hoza, Bukowski & Beery, 2000) consisted of 16 items (8 for peer network loneliness scale and 8 for peer dyadic loneliness scale) rated on a 5-point Likert scale (1 = “Not at all true”, 5 = “Really true”). Examples of the Peer Network Loneliness Scale include “I feel like I’m part of a group” and “I feel lonely a lot because I wish other kids included me more in things”. Examples of the Peer Dyadic Loneliness Scale include “I have a friend that is always there for me when I need them” and “I don’t have a friend that I can talk to about important things”. Internal reliabilities were alpha = .81 for both the Peer Network Loneliness and the Peer Dyadic Loneliness scales. Although the subscales were highly positively correlated (r = .66, p < .01), differential relationships between social and emotional loneliness and social butterfly score were expected, and therefore, subscales were kept distinct in subsequent analyses.
Chapter 3

RESULTS

Preliminary Analyses

T-tests were performed to examine potential mean differences between boys and girls on number of friends, average closeness, social butterfly score, social and emotional loneliness, friendship jealousy, ability to initiate relationships, ability to asset oneself in the relationship, conflict resolution abilities, and conflict and closeness within the best friendship. These results are shown in Table 1. As shown in Table 1, and of particular interest, girls had greater social butterfly scores than boys. Additionally, girls were found to have more friends, experience greater friendship jealousy, be more able to initiate relationships, and have greater closeness in their best friendship.

Of particular interest to this study were the correlates of the tendency toward being a social butterfly. The correlations between the variables of interest (interpersonal competence scales, social and emotional loneliness, jealousy, number of friends, average closeness, and best friendship conflict and closeness) and social butterfly scores are shown in Table 2. The tendency toward being a social butterfly significantly correlated with number of friends nominated, average closeness across friends, social loneliness, emotional loneliness, initiating relationships, asserting influence, conflict resolution, and closeness of best friendship, such that individuals with greater social butterfly scores nominate more people as friends, experience greater closeness across their friendships, feel less social and emotional loneliness, are more skilled at initiating relationships, asserting influence, and resolving conflicts, and have greater friendship quality in their best friendships.
Correlations among the variables of interest (number of friends, average closeness across friendships, social and emotional loneliness, friendship jealousy, initiating relationships, asserting influence, conflict resolution, and best friendship conflict and closeness) were also calculated (see Table 3). As expected, number of friends nominated correlated significantly with social loneliness, emotional loneliness, initiating relationships, and quality of best friendship, such that individuals nominating higher numbers of friends also experienced less social and emotional loneliness, were better at initiating relationships, and had higher quality best friendships. Average closeness reported across friendships significantly correlated with social loneliness, initiating relationships, asserting influence, and conflict resolution, such that those with greater average closeness across their friendships experience less social loneliness, are better at initiating relationships and asserting influence, and have greater conflict resolution skills. Friendship jealousy significantly correlated with social and emotional loneliness, such that individuals that experience greater friendship jealousy also experience greater social and emotional loneliness.

Individuals who are better at initiating relationships experience less social and emotional loneliness. Similarly, individuals who are better at asserting their influence in relationships are also found to experience less social and emotional loneliness, and are better able to initiate relationships. In the same fashion, those with greater conflict resolution abilities experience less social and emotional loneliness, and are better able to initiate relationships and assert their influence in their relationships.

Individuals with greater closeness in their best friendship experience decreased social and emotional loneliness, and are better able to initiate relationships, assert their influence, and resolve conflicts in their relationships. Lastly, individuals with greater conflict in their
best friendships experience increased jealousy, increased social loneliness, increased emotional loneliness, decreased ability to initiate relationships, and decreased conflict resolution ability.

**Primary analyses**

A summary of the following findings can be found in Table 4.

*Predicting interpersonal competence*

To predict one’s ability to initiate relationships, sex and age were entered in step 1 of hierarchical linear regression, friendship quantity in step 2, social butterfly score in step 3, and sex by social butterfly score interaction in step 4. Sex significantly predicted the ability to initiate relationships ($\beta = .25, p < .01$), such that girls were better able to initiate relationships than were boys. However, grade, an indicator of age, did not significantly predict the ability to initiate relationships ($\beta = -.09, \text{NS}$). An individual’s number of friends significantly predicted one’s ability to initiate relationships after controlling for sex and grade ($\beta = .19, p < .05$), such that the better able one is to initiate relationships the more friends one has. As predicted, one’s social butterfly score predicted their ability to initiate relationships, even after controlling for sex, age, and number of friends ($\beta = .22, p < .05$). Having a greater social butterfly score, above and beyond just having many friends, allows an individual to practice and hone their abilities to initiate relationships. There was no significant interaction effect ($\beta = -.16, \text{NS}$).

In a parallel regression, sex, grade, number of friends, social butterfly score and the sex by social butterfly score interaction was conducted to predict the ability to assert oneself in relationships. In predicting the ability to assert oneself in the relationship, sex and grade were not found to be significant predictors ($\beta = .03, \text{NS}; \beta = .13, \text{NS}$, respectively). An
individual’s number of friends did not significantly predict one’s ability to assert themselves in the relationship after controlling for sex and grade, ($\beta = .18$, NS). One’s social butterfly score predicted their ability to assert oneself in relationships, even after controlling for sex, age, and number of friends ($\beta = .30, p < .01$). Those with higher social butterfly scores are better able practice and hone their abilities to assert themselves in relationships. The interaction term, although not significant, did approach significance ($\beta = -.88, p = .054$), such that for boys, the higher their social butterfly score, the greater their ability to assert themselves in the relationship (see Figure 1).

Lastly, to predict one’s conflict resolution abilities, a regression of parallel structure, was conducted. In predicting the ability to resolve conflicts, sex, grade, and number of friends were not found to be significant predictors ($\beta = .11$, NS; $\beta = -.06$, NS; $\beta = .16$, NS, respectively). Social butterfly scores predicted the ability to resolve conflicts, after controlling for sex, age, and number of friends ($\beta = .17, p < .01$). This position in the network, being a social butterfly, more so than having many friends, allows an individual to practice and hone their abilities to resolve conflicts in their relationships. No significant interaction effect existed ($\beta = -.17$, NS).

**Predicting friendship quality**

In similar hierarchical linear regressions, sex and grade were entered in step 1, number of friends in step 2, social butterfly score in step 3, and the sex by social butterfly score in step 4 were used to predict average closeness across friendships, and closeness and conflict in the best friendship. In predicting the average closeness across friendships, sex, grade, and number of friends were not found to be significant predictors ($\beta = .06$, NS; $\beta = .11$, NS; $\beta = .05$, NS respectively). The tendency toward being a social butterfly predicted
average closeness across their friendships, after controlling for sex, age, and number of friends ($\beta = .28, p < .01$). Counter to hypotheses, social butterfly scores, more so than having many friends, fosters greater, rather than decreased, average closeness across friendships. No significant interaction effect existed ($\beta = -.49, NS$).

Sex was significant in predicting closeness in the best friendship ($\beta = .27, p < .01$), such that girls had higher closeness in their best friendship than did boys. Grade, however, did not significantly predict best friendship closeness ($\beta = -.01, NS$). An individual’s number of friends did significantly predict best friendship closeness after controlling for sex and grade ($\beta = .31, p < .01$), such that the more friends one had the greater best friendship closeness they experienced. Social butterfly scores predicted best friendship closeness, after controlling for sex, age, and number of friends ($\beta = .21, p < .05$). As expected, the tendency toward being a social butterfly, rather than having many friends, fosters greater best friendship closeness. A significant interaction effect existed ($\beta = .98, p < .05$), such that for girls, the higher their social butterfly score, the greater their best friendship closeness (see Figure 2).

In predicting conflict in the best friendship, neither sex, grade, number of friends, social butterfly scores, nor the social butterfly scores by sex interaction were significant ($\beta = -.06, NS; \beta = .03, NS; \beta = -.05, NS; \beta = .01, NS; \beta = .01, NS$, respectively).

**Predicting friendship jealousy**

Using a similar regression as above, in predicting friendship jealousy, sex was significant ($\beta = .37, p < .001$), such that girls experienced more friendship jealousy than did boys. Grade, number of friends, social butterfly score and the interaction between sex and
social butterfly score, however, did not significantly predict friendship jealousy ($\beta = .00$, NS; $\beta = -.10$, NS; $\beta = -.13$, NS; $\beta = .09$, NS, respectively).

*Predicting loneliness*

To predict social loneliness, sex and age were entered in step 1 of a hierarchical linear regression, friendship quantity in step 2, social butterfly score in step 3, and the sex by social butterfly score interaction in step 4. Sex and grade were not found to be significant predictors of social loneliness ($\beta = .00$, NS; and $\beta = -.05$, NS, respectively). As expected, an individual’s number of friends significantly predicted social loneliness after controlling for sex and grade ($\beta = -.31$, $p < .01$), such that the more friends one has, the less social loneliness they experience. Social butterfly scores predicted social loneliness, even after controlling for sex, age, and number of friends ($\beta = -.34$, $p < .001$). As hypothesized, the greater one’s social butterfly score, rather than having many friends, buffers one from social loneliness. No significant interaction effect was found ($\beta = .22$, NS).

To predict emotional loneliness, sex and age were entered in step 1 of a second regression, friendship quantity in step 2, social butterfly score in step 3, and sex by social butterfly score interaction in step 4. The pattern of results mimics the results for social loneliness. Sex and grade were not found to be significant predictors of social loneliness ($\beta = -.17$, NS; and $\beta = -.13$, NS, respectively). As expected, an individual’s number of friends significantly predicted emotional loneliness after controlling for sex and grade ($\beta = -.23$, $p < .05$), such that the more friends one has, the less emotional loneliness they experience. Social butterfly score predicted emotional loneliness, even after controlling for sex, age, and number of friends ($\beta = -.26$, $p < .01$). In the opposite direction as hypothesized, the tendency toward being a social butterfly, rather than having many friends, buffers one from emotional
loneliness. The interaction effect did not significantly predict emotional loneliness ($\beta = .07$, NS).
Considerable effort has recently been directed toward conceptualizing and assessing how individual adolescents differ in their friendship involvement. However, these efforts have focused mostly on representing the quality (e.g., levels of intimacy) or quantity (i.e., number of friends) of individuals’ friendship experiences and not often on the organization of friendships with respect to one another. Whereas one individual’s set of friends may be integrated into a single, close-knit clique, another’s may be spread diffusely across many separate cliques. Because different groups may recognize and reward somewhat different qualities in members, individuals with diffuse patterns of friendship involvement may develop social skills not required of others whose friendship involvement is largely restricted to a single, more homogenous group. Diffuse involvement may also facilitate diverse friendship and group experiences, offering some redundancy in available group social support. On the other hand, diffuse involvement may not afford these individuals the same levels of influence over group members or sense of belonging that others enjoy.

The present study examined the assets and liabilities associated with diverse versus homogenous organization of friendships across groups, thus extending past efforts to represent individuals’ friendship involvement without attention to their broader organization. Drawing partially on theories formed within organizational psychology, it was predicted that individuals who tend to be “social butterflies”, with involvement in many non-overlapping friendships, would display greater interpersonal competence and enjoy added protection from social, but not necessarily emotional, loneliness.
Consistent with expectations, one’s self-reported propensity toward being a social butterfly predicted their interpersonal competence above and beyond the effects of gender, grade, and number of friends. Specifically, an individual’s perception of being a social butterfly predicted their ability to initiate relationships, assert themselves in the relationship, and resolve conflicts. This finding is noteworthy as it demonstrates that the way in which one’s friends are distributed among groups is as important as or more important than how many friends one has when it comes to understanding interpersonal competence. Apparently, the task of forming and maintaining friendships with a variety of different people across different groups demands interpersonal competence that goes beyond simply the ability to make friends. An interesting direction for future research will be to examine whether these skills are specific to managing friendships across cliques. It is likely, for example, that some of the same skills that permit social butterflies to manage relationships across diverse cliques also facilitate these individuals initiation into romantic relationships. Balancing boyfriend/girlfriend relationships and existing same-sex friendships may be challenging for those individuals who do not have experience as a social butterfly or do not possess the social butterfly’s social expertise. Once in a romantic relationship, these individuals may struggle to balance time spent with their boyfriend/girlfriend and their own friends, because they have not had experience forming and maintaining relationships with people who are not friends with one another. In contrast, because social butterflies are able to successfully maintain non-overlapping friendships, they may be more adept at balancing their romantic relationships with their friendships. Additionally, social butterflies may be more successful at befriending their romantic partner’s friends, thus allowing them to spend more time with their romantic partners, fostering a better relationship. The flexibility of social butterflies to manage their
friendships and befriend the friends of the romantic partner may not only decrease conflict within the romantic relationship (Roth & Parker, 2001), but also decrease the potential conflict across existing friendships.

Interestingly, children who reported their friendship networks as being characterized by greater distribution into separate groups also showed higher quality friendships both within their single best friendship and across all their friendships. Initially it was expected that having many non-overlapping relationships might be taxing to the social butterfly, thus lowering the average friendship closeness across their friendships. This dilution of friendship quality hypothesis was based on the notion that it takes time spent in the relationship to cultivate high quality friendships. Apparently this is not the case or at least a complete explanation. On the contrary, individuals reporting a tendency toward being a social butterfly, instead, showed greater intimacy and closeness within their best friendship and across their friendships. To understand this finding it may be helpful to recall that individuals who saw their networks as being dispersed were also more interpersonally competent. Perhaps their greater social competence permits them to cultivate close, intimate relationships with their friends regardless of time spent within each relationship.

Having high quality friendships in middle school, coupled with their interpersonal competence may ease the social butterfly’s transition into high school. Most high schools are a composite of nearby middle schools, thus allowing an opportunity for a reconfiguration of existing clique boundaries. Individuals who spent their middle school years embedded in a single group may have difficulty adjusting to the re-organization of the social structure. Social butterflies, on the other hand, not only cultivated high quality friendships that may remain stable through the transition, but they also have the interpersonal competence to form
and cultivate new relationships in high school. This is not to say that non-social butterflies will not have successful friendship experiences in high school, but rather the transition may be more difficult than it would be for social butterflies.

Friendships come with obligations of responsibility and reciprocity, thus challenges to meeting these intimacy expectations within friendships may arise (Asher, Parker, & Walker, 1996). Inevitable clashes of expectations can lead to conflicts between friends, requiring attention and satisfactory efforts at resolution. Those who perceive themselves as being a social butterfly do not show any difference in the amount of conflict in their relationships. Social butterflies do, however, appear to be more interpersonally competent particularly in resolving friendship conflicts. Being able to manage and resolve friendship conflicts may be a better indicator of adjustment outcomes. In other words, although most all adolescents face friendship conflict, those with a greater tendency toward being a social butterfly have the interpersonal skills to resolve the conflicts and maintain higher quality friendships.

One category of particularly salient conflicts with friends is jealousy-related conflicts. It was expected that because social butterflies are less invested in any one friendship, they would also be less jealous and possessive of their friends than individuals who were members of close knit and closed groups. This was not the case however. Adolescents who saw their friendships as being dispersed across groups were not any less jealous over friends than were individuals who had their friendships embedded in one or just a couple of groups. This finding may have important implications for future research on friendship jealousy. Our expectation was predicated on the assumption that jealousy over friends is largely situationally determined. That is, we assumed that any individual would grow jealous and
possessive of friends if they lacked the advantage of having friends in multiple group settings. Our results, however, imply that the individuals’ personal qualities may be more important than we supposed. In other words, a person’s level of self-esteem, for example, may be a better indicator of their vulnerability than having multiple friends across cliques or embedded in a single group. Understanding the personal qualities and characteristics that make one vulnerable to jealousy is an important avenue for researchers to explore.

Those who perceived themselves as being social butterflies showed decreased social and emotional loneliness. Social loneliness is conceptualized as the absence of social relationships or from feeling that you are not a part of the group. Social butterflies, by definition, were expected to have a greater number of friendships distributed across different cliques, as compared to those with lower social butterfly scores. Thus, the more the individual’s network was reported to resemble that of a social butterfly, the less social loneliness they experienced, even after considering the benefits of having many friends. Thus, having many friends in different groups seems to provide a sense of belonging to the overall network in a way that being embedded in groups with overlapping membership does not. In middle schools, the boundaries between cliques are prominent. As such, belonging only to a single group may not buffer adolescents from social loneliness. Instead having friendships across different cliques may foster a greater sense of belonging to the larger social network that being within a single clique does not.

Having a sense of belonging to a group may not necessarily reflect an individual’s sense of connection with another. Adolescents may have one or more high quality dyadic relationships without feeling like they belong to the greater group. The construct of emotional loneliness attempts to capture this distinction by focusing on the lack of close,
intimate attachments to another person, rather than belongingness to a group (social loneliness). The more the individual perceived their network as resembling that of a social butterfly, the less emotional loneliness they experienced, even after considering the number of friends one has. To understand this finding it may be helpful to recall that individuals reporting a tendency toward being a social butterfly also reported greater intimacy and closeness. Having close, intimate friends provide individuals with social and emotional support, thus buffering the social butterfly from emotional loneliness.

Although differential findings were not found for social and emotional loneliness for social butterflies in this study, other studies should continue to explore these aspects of loneliness as opposed to considering loneliness as a single construct. For example, although this study did not allow for the exploration of how or why an individual has a social network similar to that of a social butterfly, a future study may find this to be important in distinguishing between social butterflies that are low on both social and emotional loneliness, and those that experience emotional loneliness. Previous research has identified two types of liaisons (Damico, 1975, 1976). The first types were individuals who are able to negotiate relationships between individuals in multiple groups, as opposed to being exclusively involved in a single clique. This group may be more socially competent and better able to form and maintain their friendships, thus buffering them from both social and emotional loneliness. This study may have had an abundance of this type of social butterfly participating in the study. The second type of social butterfly may include individuals characterized as those trying unsuccessfully to gain clique membership. These individuals may have associations with a variety of different cliques, but may not be accepted by them. These individuals may be less socially competent and less able to form high quality
friendships, and thus experience greater emotional loneliness. By exploring the reasons why
an individual maintains this position in the peer network, either because they are successful
at maintaining friendships across cliques or they are unsuccessful at gaining clique
acceptance, the differential pattern of experiencing social versus emotional loneliness may
emerge.

Limitations and Future Directions

Although social butterfly scores were reliably tested via the newly designed self-report
questionnaire, the limitations of self-report cannot be ignored. A self-perceived, or
self-reported, report of friendships inherently has many biases. Individuals may report more
friends than they actually have, or overestimate their affiliations across different groups, thus
inflating the social butterfly score. In an attempt to validate the self-reported social butterfly
scale, this study attempted to gather sociometric data to then calculate an individual’s social
butterfly score. Unfortunately, reliable sociometric data requires higher participation rates
than were achieved in this study. Therefore, the sociometric determination of social butterfly
scores was not possible. Since many of the friends of the participants did not participate
themselves, who their other friends are and how they are distributed across cliques could not
be determined. In the case of calculating a person’s social butterfly score, the completeness
of the data can make a large difference. Assuming these individuals did not have ties to other
groups would be a mistake that would inflate the appearance of a social butterfly. In addition
to gathering sociometric data, gathering peer-nominated social butterfly data, or teacher
reported affiliations may provide other options for validating the self-report measure.

Adolescents and teachers observe interactions amongst their peers or students, and may be
attune to individuals who are able to form and maintain friendships across groups. Having
adolescents peer-nominate and teachers report on social butterflies may be an alternative to solely relying on self-reported social butterfly scores. Future research to explore the social butterfly phenomena should also focus on using multiple means and multiple reporters to measure the tendency toward being a social butterfly.

Not being able to sociometrically determine an adolescent’s social butterfly score not only jeopardized the validation of the self-report measure, but also may have added error to the relationships found with other variables that were also self-reported. General response tendencies may have led to superfluous relationships between the variables of interest. This study relied completely on the self-report of all its measures. In some cases this was unavoidable (e.g. social and emotional loneliness), since internal feelings may not be observable by others. For other variables, such as friendship jealousy or social butterfly score, peer-nominations or teacher reports may have been more justified.

Low participation rates in the study also precluded the determination of friends’ average jealousy scores. It was hypothesized that being a social butterfly may buffer an adolescent from friendship jealousy, but instead may have adverse effects on their friends’ jealousy scores. Having a friend that has friends other than those that you share may provide additional opportunities for jealousy-provoking situations to arise. It was expected that individuals who are friends with individuals with a greater tendency toward being a social butterfly might become increasing jealous when the social butterfly chooses to interact and spend time with a different friend. Friendship jealousy research has mainly focused on an individual’s characteristics that may be related to their vulnerability to jealousy, situational factors that may provoke higher levels of jealousy, and outcomes that may arise when an individual is prone to jealousy. The nature of the friends’ friendships has not yet been
studied. Exploring the vulnerability to jealousy for the friends of those with a propensity toward being a social butterfly, attempted to address this issue. Although this study could not reliably calculate friends’ jealousy scores, future research should consider not only the target adolescent’s position in the social network, but also their friends’ positions, which may be a more accurate indicator of the adolescent’s vulnerability to jealousy.

The homogeneity of the sample in this study raises questions as to how this phenomenon may compare and contrast to more ethnically diverse school settings. In more diverse settings, the boundaries between cliques may be more ethnically defined, with adolescents choosing to spend time with people of similar ethnic descent. As such, individuals who in this setting are able to span the gaps between cliques have greater interpersonal skills that only allow them to successfully function across cliques, but within different cultures. The skill set needed for cross-ethnic interactions may be different and should be explored further. In addition to them not only having greater interpersonal competence, but they may also have self-monitoring skills that allow them to behave in situation-determined culturally appropriate ways that allow them to be accepted in a variety of groups. Additionally, the more clearly defined divisions between the groups may also lend itself to a more compartmentalized view of the self. Social butterflies in more diverse settings may view aspects of their self in more distinct, compartmentalized ways. Future research on social butterflies should explore the effect of being a social butterfly on the self, and how the diversity of the school setting shapes one’s view of themselves.

In this study friendships were captured at a single time point, however friendships are dynamic entities that change over time. Although making inferences about the relationships between friendships and other variables at a single time point is useful and necessary to
understand the long-term effects of these relationships, longitudinal studies must be conducted. Specifically in the case of understanding social butterflies and the outcomes for these individuals, it is necessary to explore whether this is a stable position in the network for some, or if it is a more temporary position. Those with a tendency toward being a social butterfly and choose to maintain this position over time may have very different long-term adjustment outcomes. As reflected on above, the characteristics of social butterflies may be important in both romantic relationships and transitioning into high school. These hypotheses assume that being a social butterfly is a relatively stable position in the network. Outcomes for those who only temporarily behave like social butterflies in an attempt to find a clique that best suits them may be very different. Their adjustment outcomes may be more similar to those that are consistently embedded in a single clique. Research in this area would greatly benefit from being able track friendships over time, specifically determining the stability of one’s position in the social network.
REFERENCES


Parker, J.G., Low, C.M. & Wargo, J. (1999) Children’s jealousy over their friends’ friends; Personal and relational correlates in preadolescent and adolescent boys and girls. Symposium conducted at the Society for Research and Child Development, Albuquerque, NM.


Appendix

Tables, Figures, and Measures
Table 1 – Independent t-tests exploring sex differences for variables of interest.

<table>
<thead>
<tr>
<th></th>
<th>Mean for Boys</th>
<th>Mean for Girls</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of friends</td>
<td>8.52</td>
<td>11.53</td>
<td>-3.70***</td>
<td>116</td>
</tr>
<tr>
<td>Average closeness</td>
<td>5.54</td>
<td>5.66</td>
<td>-.800</td>
<td>116</td>
</tr>
<tr>
<td>Social butterfly score</td>
<td>18.62</td>
<td>21.07</td>
<td>-2.19 *</td>
<td>115</td>
</tr>
<tr>
<td>Social loneliness</td>
<td>15.46</td>
<td>15.43</td>
<td>.02</td>
<td>116</td>
</tr>
<tr>
<td>Emotional loneliness</td>
<td>14.65</td>
<td>12.65</td>
<td>1.98 *</td>
<td>116</td>
</tr>
<tr>
<td>Friendship jealousy</td>
<td>19.48</td>
<td>27.07</td>
<td>-4.19 ***</td>
<td>116</td>
</tr>
<tr>
<td>Initiating relationships</td>
<td>27.17</td>
<td>30.22</td>
<td>-2.57 *</td>
<td>116</td>
</tr>
<tr>
<td>Asserting influence</td>
<td>28.78</td>
<td>29.16</td>
<td>-.323</td>
<td>116</td>
</tr>
<tr>
<td>Conflict resolution</td>
<td>27.00</td>
<td>28.31</td>
<td>-1.12</td>
<td>116</td>
</tr>
<tr>
<td>Best friendship closeness</td>
<td>49.15</td>
<td>55.33</td>
<td>-3.26 **</td>
<td>116</td>
</tr>
<tr>
<td>Best friendship conflict</td>
<td>6.72</td>
<td>6.35</td>
<td>.575</td>
<td>116</td>
</tr>
</tbody>
</table>

+ $p = .051$, * $p < .05$, ** $p < .01$, *** $p < .001$
Table 2 – Significant correlations of interest between social butterfly score and other variables.

<table>
<thead>
<tr>
<th>Social Butterfly Score</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>.20 *</td>
</tr>
<tr>
<td>Number of friends</td>
<td>.31 **</td>
</tr>
<tr>
<td>Average closeness</td>
<td>.28 **</td>
</tr>
<tr>
<td>Social loneliness</td>
<td>-.38 **</td>
</tr>
<tr>
<td>Emotional loneliness</td>
<td>-.33 **</td>
</tr>
<tr>
<td>Friendship Jealousy</td>
<td>NS</td>
</tr>
<tr>
<td>Initiating relationships</td>
<td>.29 **</td>
</tr>
<tr>
<td>Asserting influence</td>
<td>.32 **</td>
</tr>
<tr>
<td>Conflict resolution</td>
<td>.21 *</td>
</tr>
<tr>
<td>Best friendship closeness</td>
<td>.32 **</td>
</tr>
<tr>
<td>Best friendship conflict</td>
<td>NS</td>
</tr>
</tbody>
</table>

* $p < .05$, ** $p < .01$
Table 3 – Significant correlations between variables of interest.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Number of friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 – Average closeness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 – Jealousy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 – Social loneliness</td>
<td>-.27**</td>
<td>-.27**</td>
<td>.35**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 – Emotional loneliness</td>
<td>-.25**</td>
<td>.22*</td>
<td>.66**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 – Initiating relationships</td>
<td>.25**</td>
<td>.43**</td>
<td>-.41**</td>
<td>-.40**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 – Asserting influence</td>
<td>.30**</td>
<td>-.45**</td>
<td>-.40**</td>
<td>.66**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 – Conflict resolution</td>
<td>.24**</td>
<td>-.27**</td>
<td>-.23*</td>
<td>.55**</td>
<td>.42**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 – Closeness of best friendship</td>
<td>.34**</td>
<td>-.31**</td>
<td>-.49**</td>
<td>.50**</td>
<td>.27**</td>
<td>.31*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 – Conflict in best friendship</td>
<td>.26**</td>
<td>.32**</td>
<td>.19*</td>
<td>-.20*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05, **p < .01
Table 4 – Summary of hierarchical regression analyses for step-wise regressions of the nine variables of interest (standardized β shown).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sex (1=male, 2=female)</td>
<td>Grade</td>
<td>Friendship quantity</td>
<td>Social butterfly score</td>
</tr>
<tr>
<td>Initiating relationships</td>
<td>.25**</td>
<td>-.09</td>
<td>.19*</td>
<td>.22*</td>
</tr>
<tr>
<td>Asserting oneself in relationship</td>
<td>.03</td>
<td>.13</td>
<td>.18</td>
<td>.30**</td>
</tr>
<tr>
<td>Conflict resolution</td>
<td>.11</td>
<td>-.06</td>
<td>.16</td>
<td>.17**</td>
</tr>
<tr>
<td>Average closeness</td>
<td>.06</td>
<td>.11</td>
<td>.05</td>
<td>.28**</td>
</tr>
<tr>
<td>Best friendship closeness</td>
<td>.27**</td>
<td>-.01</td>
<td>.31**</td>
<td>.21*</td>
</tr>
<tr>
<td>Best friendship conflict</td>
<td>-.06</td>
<td>.03</td>
<td>-.05</td>
<td>.01</td>
</tr>
<tr>
<td>Friendship jealousy</td>
<td>.37***</td>
<td>.00</td>
<td>-.10</td>
<td>-.13</td>
</tr>
<tr>
<td>Social loneliness</td>
<td>.00</td>
<td>-.05</td>
<td>-.31**</td>
<td>-.34***</td>
</tr>
<tr>
<td>Emotional loneliness</td>
<td>-.17</td>
<td>-.13</td>
<td>-.23*</td>
<td>-.26**</td>
</tr>
</tbody>
</table>

+ p < .1, * p < .05, **p < .01, ***p < .001
Figure 1 – Pictorial representation of a “structural hole”. The target individual (T) would be the filler of the structural hole. Without “T”, the clusters would be unconnected.
Figure 2 – Near significant sex by social butterfly score interaction predicting the ability to assert oneself in relationships ($\beta = -.88, p = .054$) (Girls – solid line, Boys – dashed line).
Figure 3 – Significant sex by social butterfly score interaction predicting best friendship closeness ($\beta = .98$, $p < .05$) (Girls – solid line, Boys – dashed line).
Demographic Information

Directions: Please answer the following questions.

Name: __________________________________________________

Date of Birth: ___________________________________________

Grade: __________________________________________________

Gender:  M   /   F (circle one)

Which of the following best describes you (check one):

___ Caucasian/White (non-Hispanic)

___ Caucasian (Hispanic)

___ African-American

___ Asian-American

___ Other (Please specify): ________________________________
Friendship Nominations

*Directions:* Some people have a few friends, and some people have many friends. Please list the names of your friends (first and last name) below. For each friend, on a scale of 1-7, indicate how close this friend is to you (1=not at all close, 4=somewhat close, 7=very close). Then check off ALL the activities you and this friend do together. Lastly, put a star next to your ONE very best friend. You do not need to fill all the lines provided.

<table>
<thead>
<tr>
<th>Name of Friend</th>
<th>How close is this friend to you? (Circle your answer choice)</th>
<th>Do homework/study together</th>
<th>Participate in clubs/organizations together</th>
<th>Play sports together</th>
<th>Hang out (e.g., shopping, movies, at each other’s house)</th>
<th>Play games (board, video, computer games, etc.) together</th>
<th>Rely on each other for support</th>
<th>Can tell each other anything</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all close</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Social Butterfly self-report

Directions: Please indicate how true the following statements are for you (1 = not true at all, 5 = really true).

1. Most of my friends are not friends with each other.

<table>
<thead>
<tr>
<th>Not at all true</th>
<th>A little true</th>
<th>Somewhat true</th>
<th>Mostly true</th>
<th>Really true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

2. I fit in well with different groups of students.

<table>
<thead>
<tr>
<th>Not at all true</th>
<th>A little true</th>
<th>Somewhat true</th>
<th>Mostly true</th>
<th>Really true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

3. I have separate groups of friends I can hang-out with.

<table>
<thead>
<tr>
<th>Not at all true</th>
<th>A little true</th>
<th>Somewhat true</th>
<th>Mostly true</th>
<th>Really true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

4. I feel like I'm a part of various groups.

<table>
<thead>
<tr>
<th>Not at all true</th>
<th>A little true</th>
<th>Somewhat true</th>
<th>Mostly true</th>
<th>Really true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

5. I am accepted by more than one group at school.

<table>
<thead>
<tr>
<th>Not at all true</th>
<th>A little true</th>
<th>Somewhat true</th>
<th>Mostly true</th>
<th>Really true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

6. Most of my friends don’t hang-out with each other.

<table>
<thead>
<tr>
<th>Not at all true</th>
<th>A little true</th>
<th>Somewhat true</th>
<th>Mostly true</th>
<th>Really true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Revised Interpersonal Competence Questionnaire (ICQ-R)

Instructions: Circle the number which best describes you.
1 = Poor at this; would be so uncomfortable and unable to handle this situation that it would be avoided at possible.
2 = Fair at this; would feel uncomfortable and would have some difficulty handling this situation.
3 = O.K. at this; would feel somewhat uncomfortable and have a little difficulty handling this situation.
4 = Good at this; would feel very comfortable and could handle this situation very well.
5 = EXREMELY good at this; would feel very comfortable and could handle this situation very well.

1. How good are you at asking someone new to do things together, like go to a ball game or a movie? 1 2 3 4 5
2. How good are you at getting people to go along with what you want? 1 2 3 4 5
3. How good are you at resolving disagreements in ways that make things better instead of worse? 1 2 3 4 5
4. How good are you at going out of your way to start up new relationships? 1 2 3 4 5
5. How good are you at taking charge? 1 2 3 4 5
6. How good are you at dealing with disagreements in ways that make both people happy in the long run? 1 2 3 4 5
7. How good are you at carrying on conversations with new people that you would like to know better? 1 2 3 4 5
8. How good are you at sticking up for yourself? 1 2 3 4 5
9. How good are you at resolving disagreements in ways so neither person feels hurt or resentful? 1 2 3 4 5
10. How good are you at introducing yourself to people for the first time? 1 2 3 4 5
11. How good are you at getting someone to agree with your point of view? 1 2 3 4 5
12. How good are you at dealing with disagreements in ways so that one person does not always come out the loser? 1 2 3 4 5
1 = Poor at this; would be so uncomfortable and unable to handle this situation that it would be avoided at possible.
2 = Fair at this; would feel uncomfortable and would have some difficulty handling this situation.
3 = O.K. at this; would feel somewhat uncomfortable and have a little difficulty handling this situation.
4 = Good at this; would feel very comfortable and could handle this situation very well.
5 = EXREMELY good at this; would feel very comfortable and could handle this situation very well.

13. How good are you at calling new people on the phone to set up a time to get together to do things? 1 2 3 4 5

14. How good are you at deciding what should be done? 1 2 3 4 5

15. How good are you at dealing with disagreements in ways that don’t lead to big arguments? 1 2 3 4 5

16. How good are you at going places where there are unfamiliar people in order to get to know new people? 2 3 4 5

17. How good are you at voicing your desires and opinions? 1 2 3 4 5

18. How good are you at getting over disagreements quickly? 1 2 3 4 5

19. How good are you at making good first impressions when getting to know new people? 1 2 3 4 5

20. How good are you at getting your own way with others? 1 2 3 4 5

21. How good are you at controlling your temper when having a conflict with someone? 2 3 4 5

22. How good are you at being an interesting and fun person to be with when first getting to know people? 2 3 4 5

23. How good are you at making decisions about where to go or what to do? 1 2 3 4 5

24. How good are you at backing down in a disagreement once it becomes clear that he is wrong? 2 3 4 5
Friendship Quality Questionnaire (FQQ)

Directions: Think about your friendship with your very best friend.

My best friend is ______________________.

Write in initials of friend.

1. We sit together at lunch.

Not at all true A little true Somewhat true Mostly true Really true
1 2 3 4 5

2. We get mad at each other.

Not at all true A little true Somewhat true Mostly true Really true
1 2 3 4 5

3. We help each other with schoolwork.

Not at all true A little true Somewhat true Mostly true Really true
1 2 3 4 5

4. We make each other feel important and special.

Not at all true A little true Somewhat true Mostly true Really true
1 2 3 4 5

5. When one of us is mad about something that happened to us, we can talk to each other about it.

Not at all true A little true Somewhat true Mostly true Really true
1 2 3 4 5

6. We care about each others feelings.

Not at all true A little true Somewhat true Mostly true Really true
1 2 3 4 5

7. We tell each other about our problems.

Not at all true A little true Somewhat true Mostly true Really true
1 2 3 4 5

8. We pick each other as partners for things.

Not at all true A little true Somewhat true Mostly true Really true
1 2 3 4 5
9. We argue.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5

10. We help each other with things so we can get done quicker.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5

11. We hang out together at school.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5

12. We talk about the things that make us sad.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5

13. We ask each other for help and advice when we have trouble figuring out something.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5

14. We say really mean things to each other.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5

15. We tell each other that we’re good at things.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5

16. We tell each other secrets.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5

17. We do fun things together.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1                       2                      3                      4                      5
Friendship Jealousy Questionnaire (FJQ)

On this questionnaire, imagine that each of these situations happened to you and your SAME-SEX best friend. Think about how jealous or upset you would feel if the situation really occurred.

1. You call your best friend several times to see if (s)he wants to go see a new movie, but when you finally get through, (s)he says that another boy/girl that you both know already asked him/her to go see it and (s)he agreed to go with him/her.

   Not at all jealous  1  A little jealous  2  Somewhat jealous  3  Mostly jealous  4  Very jealous  5

2. You and your best friend are in the same class, in which the instructor asks the class to pair up with a study partner for the year. Before you have a chance to talk with him/her, your best friend agrees to be study partners with another boy/girl that you both know.

   Not at all jealous  1  A little jealous  2  Somewhat jealous  3  Mostly jealous  4  Very jealous  5

3. You walk into the library and see your best friend and another boy/girl that you both know talking, joking, and making plans to get together later when their classes are over.

   Not at all jealous  1  A little jealous  2  Somewhat jealous  3  Mostly jealous  4  Very jealous  5

4. You find out that your best friend went to the opening of a new music store with another boy/girl that you both know, when you and your best friend had talked about going together as soon as it opened.

   Not at all jealous  1  A little jealous  2  Somewhat jealous  3  Mostly jealous  4  Very jealous  5

5. You find out that your best friend got into a big fight with him/her parents, and (s)he called another boy/girl that you both know for advice and did not talk to you about it.

   Not at all jealous  1  A little jealous  2  Somewhat jealous  3  Mostly jealous  4  Very jealous  5
6. Your best friend is assigned to work on a project with another boy/girl that you both know and they start hanging out together a lot.

Not at all jealous  A little jealous  Somewhat jealous  Mostly jealous  Very jealous
1  2  3  4  5

7. Your best friend has some important news. You find out that (s)he tells another boy/girl that you both know before (s)he tells you.

Not at all jealous  A little jealous  Somewhat jealous  Mostly jealous  Very jealous
1  2  3  4  5

8. You give your best friend a gift for him/her birthday, but (s)he hardly notices because (s)he is so excited and surprised about a gift (s)he got from another boy/girl that you both know.

Not at all jealous  A little jealous  Somewhat jealous  Mostly jealous  Very jealous
1  2  3  4  5

9. You call your best friend to see what’s up and if (s)he has made plans for the evening and (s)he says that (s)he can't talk right now because another boy/girl that you both know is over.

Not at all jealous  A little jealous  Somewhat jealous  Mostly jealous  Very jealous
1  2  3  4  5

10. Your best friend and another boy/girl that you know go on a weekend camping and hiking trip together.

Not at all jealous  A little jealous  Somewhat jealous  Mostly jealous  Very jealous
1  2  3  4  5
Peer Network and Dyadic Loneliness Scale (PNDLS)

*Directions*: Please indicate how true the following statements are for you (1 = not true at all, 5 = really true).

1. **I fit in with other kids.**
   - Not at all true: 1
   - A little true: 2
   - Somewhat true: 3
   - Mostly true: 4
   - Really true: 5

2. **I always feel left out when I’m with others my age.**
   - Not at all true: 1
   - A little true: 2
   - Somewhat true: 3
   - Mostly true: 4
   - Really true: 5

3. **I hardly ever feel accepted by others my age.**
   - Not at all true: 1
   - A little true: 2
   - Somewhat true: 3
   - Mostly true: 4
   - Really true: 5

4. **I feel like I’m part of a group.**
   - Not at all true: 1
   - A little true: 2
   - Somewhat true: 3
   - Mostly true: 4
   - Really true: 5

5. **I’m often bored when I’m with other kids.**
   - Not at all true: 1
   - A little true: 2
   - Somewhat true: 3
   - Mostly true: 4
   - Really true: 5

6. **I usually have other kids to do things with.**
   - Not at all true: 1
   - A little true: 2
   - Somewhat true: 3
   - Mostly true: 4
   - Really true: 5

7. **I feel like most kids like me.**
   - Not at all true: 1
   - A little true: 2
   - Somewhat true: 3
   - Mostly true: 4
   - Really true: 5

8. **I feel lonely a lot because I wish other kids included me more in things.**
   - Not at all true: 1
   - A little true: 2
   - Somewhat true: 3
   - Mostly true: 4
   - Really true: 5
9. I have a friend that is always there for me when I need them.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1             2             3             4             5

10. I have someone my age that is a really close friend.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1             2             3             4             5

11. I have a friend that really cares about how I feel inside.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1             2             3             4             5

12. I don’t have a friend that I can talk to about important things.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1             2             3             4             5

13. I don’t have anyone special my age to share things with.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1             2             3             4             5

14. I have a friend that I know will always care about me.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1             2             3             4             5

15. I hardly ever feel lonely because I have a best friend.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1             2             3             4             5

16. I wish that someone my age thought I was really special.

Not at all true  A little true  Somewhat true  Mostly true  Really true
1             2             3             4             5
Nassim Ebrahimi

Education
- The Pennsylvania State University, Ph.D., 2005, Psychology
- The Pennsylvania State University, M.S., 2003, Psychology
- University of Maryland, College Park, B.S., 2000, Neurobiology and Physiology
- University of Maryland, College Park, B.S., 2000, Psychology

Publications
- Ebrahimi, N. (in prep). *The costs and benefits of being a social butterfly: Interpersonal and intrapersonal correlates of individuals with friends across multiple groups.*

Presentations
- August 2000 – National Institute of Child Health and Human Development (NICHD) Poster Presentation at the Annual Summer Research Fellowship Poster Symposium
- August 1996 – Howard Hughes Summer Research Fellowship Presentation Series

*Updated December 2005
References available upon request.*